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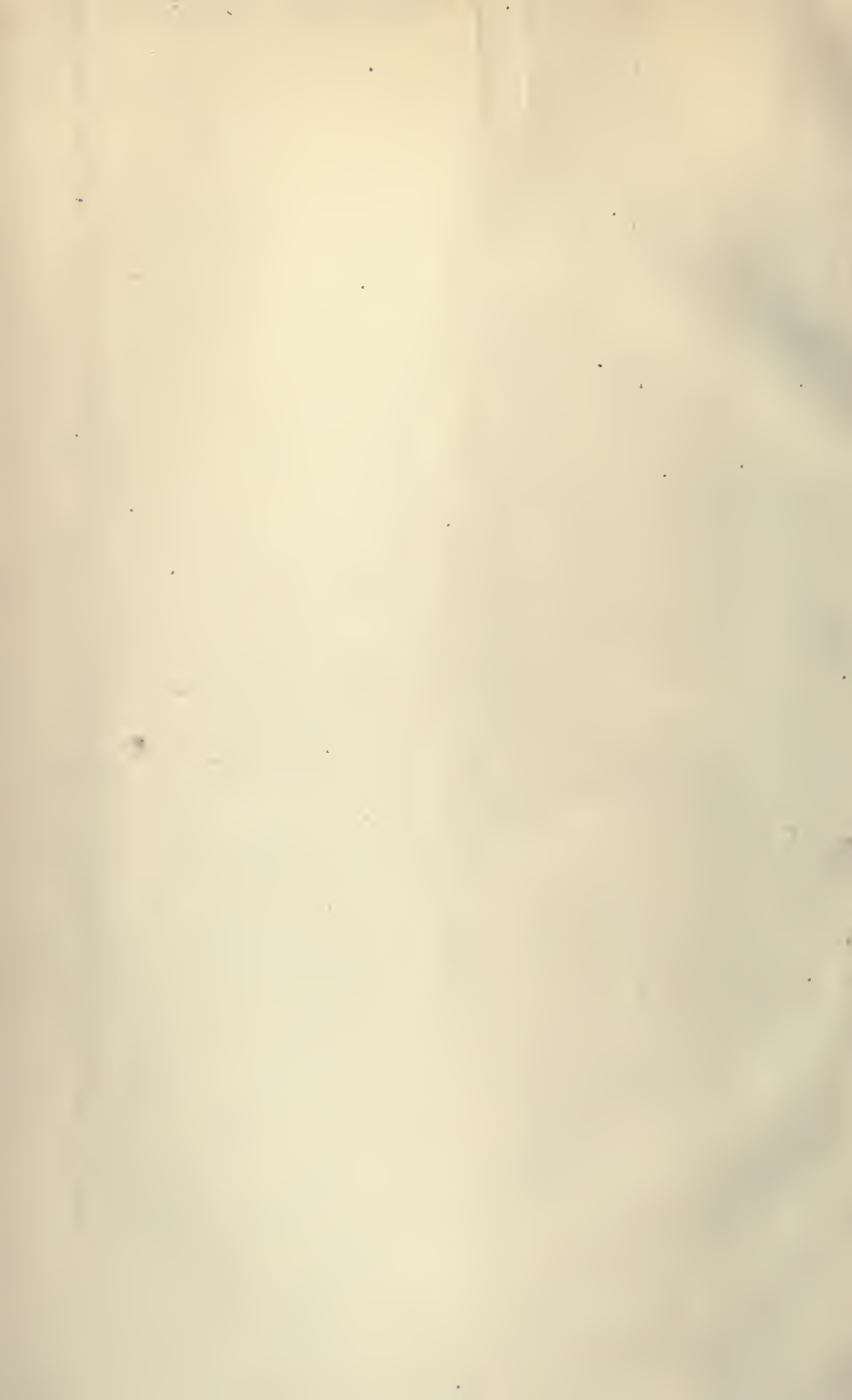
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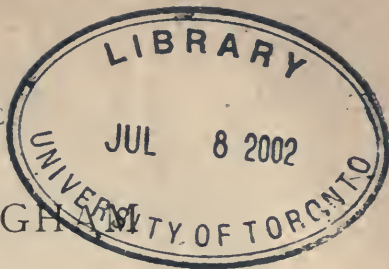


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THE

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THE
BIRMINGHAM MEDICAL REVIEW.
JANUARY, 1895.

ORIGINAL COMMUNICATIONS.

THE BRADSHAW LECTURE ON JAMES SYME,
REGIUS PROFESSOR OF SURGERY
IN THE UNIVERSITY OF EDINBURGH 1833-1869.

A STUDY OF HIS INFLUENCE AND AUTHORITY
ON THE SCIENCE AND ART OF SURGERY DURING THAT PERIOD.

*Delivered before the Royal College of Surgeons of England on
Tuesday, December 11th, 1894.*

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SURGERY OF PARIS.

MR. PRESIDENT AND GENTLEMEN,

It is not, I venture to think, an inappropriate fulfilment of the intention of the founder of this lecture that, apart from some special subject of surgical science or practice that might be selected, the consideration of the career of a great surgeon could be chosen as affording material of the highest interest and value. More especially is this the case when it happens that the life in contemplation—that of James Syme—bestowed benefits not only on the country of his birth, but on all countries where human suffering sought relief at the hands of surgery.

Though upwards of twenty years have passed away since the death of Syme, I feel convinced that those amongst us who knew the man and his work, or those who can only learn what he was by his writings, will unite in a judgment that very few in the history of surgery have equalled him in his absolute devotion to his calling, and none have surpassed him in the utility of his practical suggestions for the preservation of the lives and limbs of his fellow-creatures.

If the earlier period during which Syme taught clinical surgery was not so striking in its developments as the later, arising from what followed the discovery of anæsthetics, the application of the antiseptic system, and the use of ligatures antiseptically prepared, it must be borne in mind that the difficulties surrounding the successful practice of surgery at that time were augmented, and demanded the extreme of personal attention. Notwithstanding, Syme overcame them. His self-reliance, sagacity, and fertility of resource were his most assured endowments, and these he cultivated and matured as time went on and gave him experience. It may be truly affirmed that the period covered by Syme's commencement of practice and the resignation of his chair comprehended a period in the advancement of the science and practice of surgery—a space of fifty years unequalled in the history of the profession. To the last his mind was open to the adoption of additional means of simplifying the practice of surgery, and so long as these did not clash with those principles of thought and action which for ever guided him in his calling, he would readily become the staunchest advocate of change.

One cannot trace the career of a great surgeon without dwelling, if only for a moment, on some of the influences that contributed in early days to subsequent eminence. The thorough ascendancy with Syme,* as well as with those who preceded him, rested on the fact that he both learnt and taught anatomy. The foundation of the northern school of surgery,

* Historical Sketch of the Edinburgh Anatomical School, Edinburgh, 1867.—Struthers

begun and maintained from the days of John Bell to those of William Fergusson, owed its solidity to this mastery of anatomy. The surgeons of Edinburgh as early as 1505, as provided by the first Charter granted to them, had to examine the applicant for admission to the Incorporation in anatomy, and were to have a body for dissection once a year. This was a beginning culminating in 1694 in the completion of the surgeons' anatomical theatre for dissection, and finally, under Munro's influence, led to the establishment in 1726 of the medical school of the university. It was not yet, however, that surgical anatomy, the only true guide of the operating surgeon, was placed in the front. This was reserved for John Bell, who secured its application by enforcing the practice of dissection.

No truer description of this illustrious man can be given than what is contained in the words of Dr. Struthers: "He was not only a bold and dexterous operator, but combined all the qualities, natural and acquired, of a great surgeon to an extraordinary degree. He was original and fearless, and a thorough anatomist. He had intellect, nerve, and also language—was master alike of head, hand, and tongue or pen, and he was laborious as well as brilliant."

When this master of our craft was passing away in a foreign land,* the subject of my present thought was entering his twenty-first year, and acting as demonstrator of anatomy to Robert Liston, and not yet a Member of his College of Surgeons. Syme's first qualification was M.R.C.S. Eng., 1821, subsequently he had the unique honour of being F.R.C.S. Eng., Edin. and Irel.

To speak of the Edinburgh School is to call to mind that famous university which, wherever the English tongue is spoken, cannot fail to be regarded as having ever been pre-eminent in the making of our profession. If in its glorious past it stood well-nigh alone, distancing all competition, it will not, I am prepared to assert, be denied that in the present day, at least in

* John Bell died in Rome in 1820.

certain respects, it maintains its claim to that pre-eminence. I say this without any thought of forgetting our English or our Irish schools; but until this metropolis obtains those facilities for conferring degrees adequate to the opportunities for study no less than to the character, the ability, and the thoroughness of the teaching it possesses, I shall not hesitate to regard our attitude towards the great body of the profession in our country as being unworthy of the position we assume, and which we have only to thank apathy and selfishness that it is yet possible to be maintained.

Liston gave up the teaching of anatomy in 1833. Syme took his place, continuing to teach for the next few years until he lectured solely on surgery. By this he attained that absolute confidence, based on anatomy, which he never lost, that speedily led to his successful application of operative surgery to the cure of disease. I have the expectation that when I shall have drawn attention to what he accomplished, and by what means it was brought about, the eulogium I have just quoted as having justly belonged to Bell will equally have been merited by Syme.

In 1828, unconnected with any hospital, Syme performed for the first time in Great Britain the operation of excision of the elbow-joint. I cannot speak on this subject of excision of joints in connection with his name without making a passing reflection on the strange vicissitudes of reputation that dogged the adoption by the profession of the most beneficent operation of the century in which he lived. Parks' suggestion, in his never-to-be-forgotten words of the "total extirpation of the articulation," in his letter to Percival Pott in 1782, as a treatment for diseased joints, led only to its application in the knee, so far as his actual work was concerned, and left to the Moreaus the distinction of carrying it out in the elbow in 1797, just two years previous to the date of Syme's birth. After the Moreaus the whole subject seemed to have slept until revived by Syme, who gave an account of what he had done in the first book he published—namely, a "Treatise on the Excision of Diseased Joints"—in 1831, he then having had an experience of fourteen cases.

Undoubtedly to Syme alone belongs the merit of having substituted excision for amputation of the limb in regard to the elbow-joint. He succeeded because, as was ever his wont, he in the first instance established the principle, as alone calculated to secure success in the treatment of caries in joints by excision, that there must be complete cutting or scraping until sound bone was reached. He thus concludes his observations in his earliest record of cases: "The almost forgotten operation of Moreau will now again, perhaps, be reconsidered, and I hope make such a deep impression on the profession as may induce its practitioners to pause before they mutilate a fellow-creature by amputating his arm for disease or injury of the elbow-joint." To this petition, modest and overflowing with humanity, no more fitting judgment can be available than that which has been written down: "If he had done nothing else, he would have been one of the greatest benefactors of the human race." *

The success that attended this proceeding in the elbow led Syme, as time went on, to the belief that it was well to limit its performance to that articulation and the shoulder. As is well known, he dismissed excision of the knee. He tried it. He found the knee did not grow in proportion as compared with its fellow in one instance, and he thought, therefore, an artificial substitute would be more useful than the limb preserved by excision; and this conviction he recorded after the lapse of twenty years from his early experience. Time, however, in this has not verified the correctness of his judgment. Within ten years of its publication our late colleague, Sir William Fergusson, revived the operation of the knee by performing it at King's College Hospital, thereafter following throughout Great Britain, for a good twenty years, the contest between surgeons as to its mode of procedure—a contest ending in the attainment at this time of a well-justified estimate of its value in selected cases in adults and of the adoption of arthrectomy in children.

Fergusson, in dwelling on the period of inaction—in his lectures, delivered in these walls in 1867, on the Progress of

* *Edinburgh Medical and Surgical Journal.* 1870.

Anatomy and Surgery, and referring generally to excision of joints—laments the supineness of the English surgeons in language almost pathetic: “Not a breath, not a pen, not a knife stirred in England on the subject.” At the same time that he uttered these words, he rendered to Syme the tribute that he recognised as due—that to him, and to him alone, belonged the establishment of the beneficent operation of excision of the elbow-joint when affected by disease or injury.

Though tibio tarsal amputation had been not infrequently performed on the Continent previously to Syme’s operation at that joint, it is to him that the profession is indebted for its introduction and perfection in this country. In 1842, on September 8th, the first occasion on which the proceeding was carried out, the new feature which has made the operation what it is was established—that of securing the pad of the heel as the covering of the stump. Neither Velpeau nor Baudens seized this idea. Flaps taken from the dorsum of the foot—from the skin above the heel—resulted in a line of union that exposed an integumental cicatrix alone to bear the pressure in locomotion; hence arose disappointment and comparative failure. That the pad of the heel retains its thickness after long years of pressure as the medium of support in the stump, and does not become thin and wasted, as in almost every other amputation, no matter where situated or with whatever flaps covered, is universally recognised by surgeons. Well might Syme write* “that he thought that this form of amputation might be advantageously introduced into the practice of surgery, and that he regretted the many limbs that might have been saved by it, and that he would be glad if what he had said in its favour might encourage others to its performance.”

In this operation, as in many others that we can readily call to mind, the originator was pestered by the suggestion of so-called improvements. These took the form, in the main, of the question as to the sources whence the coverings of the stump were to be derived. Syme, from the first to the last, always

* Edinburgh Medical and Surgical Journal, 1843.

insisted on the value of the natural pad of the heel constituting undivided in the stump the medium of pressure, in preference to any other covering from the neighbourhood of the joint. The lapse of fifty years has not lessened the value or humanity of this operation, or altered the guidance recorded in the first instance as to the mode of its performance.

The younger generation of surgeons, with their full knowledge of its excellence, may well wonder at my dwelling on the proceeding with emphatic comment. I cannot, however, forget that when I performed it in the General Hospital, Birmingham, in August, 1853, now forty years ago, it was not even then, eleven years after its introduction, in general adoption, and had not previously been performed in the Midland Counties. I ventured three years later to communicate my experience to Mr. Syme himself,* to me then personally unknown, referring to its applicability to infant deformity, to adult disease as well as to injury. I received from him the following letter, in reading which I tender no apology, as it is not only surgically historical, but it evidences that moderation of tone in alluding to his brilliant proceeding, born, it may be, of some passing disappointment, and yet shewing no trace of want of assurance of ultimate success that is ever the greatest characteristic of genius.

[COPY OF A LETTER FROM PROFESSOR SYME.]

Edinburgh, May 8th, 1856.

My dear Sir.—The results of your experience are very gratifying to me, and will, I hope, tend to lessen the prejudice which still exists against the operation in some quarters. I beg to thank you for the expression of your approbation, which encourages me to persevere in pursuing the great object of my professional life, which is, and always has been, to render some service in improving the practice of surgery.

I remain, my dear Sir, yours very truly.

Oliver Pemberton, Esq.

JAMES SYME.

It is with no ordinary feeling of pride that I recall to mind that the reception of this letter led to a friendship, surgical as well as social, that terminated only with life. Moreover, I was then that which I would I were now—a very young hospital

* On Amputation at the Ankle-joint. Pemberton London, 1856.

surgeon—whilst the writer was in the zenith of his fame. Beyond this, the circumstance illustrated a marked feature in Syme's character—that of cordially welcoming the younger members of the profession, hailing from any quarter, and discussing with them in social intercourse the story and illustration of the surgeon's art he loved so well.

No subject has more widely elicited a difference of opinion than the treatment of stricture of the urethra. We are all of us familiar with the views of those who have in the past so variously and strenuously advocated the use of dilatation, of caustics, or of internal incision. After failure with dilatation and internal division in a case which came under Syme's care in 1840, he, for the first time carried out the external division of the stricture; subsequent experience convinced him of the value of the proceeding; and in 1849 he laid his views before the profession. The principles involved in Syme's proceedings I must give you in his own words: * 1. "That there is no stricture truly impermeable, and that with time and care in every case an instrument may be passed through it and serve as a guide for the knife 2. That all strictures which cannot be remedied by simple dilatation, admit of effectual relief only through a free division of the contracted part of the canal. 3. That this object can be attained with certainty and safety only by an external incision in a line corresponding with the raphe of the perineum upon a grooved director passed through the stricture." The publication of these views gave rise to no ordinary controversy both in this country and in France, the main difference ranging between the advocates of internal as opposed to external division. The lapse of years should enable us to review with calmness this field of contention.

There are certain conditions in connection with stricture to the existence of which hardly any of us will feel inclined to demur. In the first place, let me ask what is the meaning of the word "cure" in stricture? In simple stricture due to inflammation of the lining membrane of the urethra there is the

* Stricture of the Urethra and Fistula in Perineo. Edinburgh, 1849.

"cure" by dilatation only. In organic stricture, originally simply inflammatory, but becoming aggravated by neglect, or too frequently increased by ill-considered surgical proceedings, there is, properly speaking, no "cure." "Once organic stricture, always organic stricture," is my belief. It is in these cases of organic and permanent stricture, where the induration has become non-dilatable or cartilaginous, or where there is fistula, that Syme's views seem to me to commend themselves to our judgment. Believing, myself, in the permanence of these changes established in the urethra, whether by injury or disease, I have never looked with favour on any internal severance of the lining of the canal. Surely the methods employed to forcibly break up the obstruction are the means of artificially inducing the very conditions which have resulted from other and unavoidable causes; and I regard a shut-up wound in the internal face of the lining of the urethra as being attended by dangers to which an open wound on the outside face is exempt.

For carrying into effect external urethrotomy, there never was in Syme's plan any cutting without a guide; the extent of the obstruction was clearly and completely divided on a grooved staff passed through it in the middle line into the bladder; hence neither hæmorrhage nor extravasation followed. But how about obtaining this guide? Are there no impermeable strictures? In these Syme had no belief. Given time and rest, it was his opinion that no stricture ultimately resisted the passing of an instrument. On this hear his own words: * "I have never either publicly or privately been unable to pass an instrument since I became satisfied that there was no true impermeability." As to this question of non-impermeability, I venture to express my own concurrence, always excepting those of traumatic origin where complete severance of the canal has occurred.† Syme in 108 cases in which he performed external urethrotomy lost only two patients.

And now what conclusions are we entitled to draw from the

* *Op. cit.*, p. 35.

† On Traumatic destruction of the Urethra. Pemberton, *Lancet*, 1861.

evidence I have adduced? Proof that Syme originated a treatment of stricture by external division in which treatment by dilatation and other means had failed ; that this treatment maintains at this day the value claimed for it by Syme, bringing about a permanent relief from an intolerable and complicated malady—secured in most instances by no subsequent passing of instruments—the exception to this being the need that one might be wanted about once in three months, an undertaking that the patient can easily be instructed to manage for himself.

The study of aneurysm amongst surgeons in all countries has ever been one of deep interest. In Great Britain the names of Hunter and Jones, of Freer and Hodgson, of Syme and Bellingham, will ever be associated with the successful application of treatment for its relief. Here anatomy and pathology have truly been the guides of surgery. It is with diffidence, before an assembly such as this, that I mention that I have myself enjoyed opportunities* of inquiring into the value of various forms of treatment and of investigating some of those pathological changes in arteries and veins that lead to the production of some of the less common forms of the disease. Whilst doing this, however, you will, I trust, believe me when I say that it is for the express object of recalling the occasion in 1872 when, within these walls, Professor Holmes delivered his masterly lectures on the subject, to the illustration of which it was my great privilege to contribute specimens of arterio-venous communications, the results of ligature and pressure in the treatment of aneurysmal formations. These lectures, I need hardly state, gave an impetus that yet endures, and shed a clearer light on the more obscure points connected with their progress and remedy.

This interest is naturally awakened in contemplating Syme's treatment of certain aneurysms of the most formidable character,

* Aneurysmal Varix, Transactions of the Royal Medical and Chirurgical Society, 1861. Aneurysm, Address in Surgery, British Medical Association, 1872. On ligature of Iliac aneurysms, *idem*, 1877.

in which, had he not deviated on his own initiation from the Hunterian principle that the artery should invariably be ligatured beyond the confines of the tumour, there had been none other ending save disaster and death. That he had a happy touch in dealing with arteries may well be believed, that since he tied the femoral artery thirty-five times with one failure from suppuration of the sac owing to the use of prolonged pressure and consequent derangement of the general health. To tie the femoral artery safely he suggests that the operation is one not of difficulty but nicety. "This nicety consisted in the use of a clean cut to open the sheath of the vessel, first seen lying white and free from surrounding bleeding from little vessels, then the vessel cleared in the same way of its cellular and fatty substance, and the needle can be passed without difficulty or danger."*

Nothing in what Syme put in practice relating to the treatment of aneurysm affected the general view of the Hunterian operation in the great majority of instances. He argued that there were situations, such as was the case in certain axillary aneurysms, where the application of a ligature to the subclavian on the Hunterian principle promised nothing beyond misfortune; while opening the sac and securing both ends of the ruptured vessel, however difficult and arduous such a proceeding appeared, in his judgment promised, if it did not ensure, a favourable result. The belief that all parts of the artery included in the walls of the sac were unsound seemed to forbid the application of the ligature to any portion of the artery close to it, that being held, in all probability, to be unsound likewise.

Reflection as to the modes in which spontaneous aneurysms most frequently commence and extend satisfied Syme that this need not be the case. Guided by this conviction, in 1857 he successfully treated a traumatic aneurysm of the carotid, too low for proximal ligature, by incision and ligature of both openings at the wound. Thus fortified, he operated on a patient forty-seven years of age on February 1st, 1860, in the

* *Edinburgh Medical and Surgical Journal*, 1866, p. 968.

case of a large aneurysm situated in the left axilla, evidently a rapidly extending one of the axillary artery. The main difficulty and danger of the operation were overcome by the method in which a command over the artery was obtained before it was tied. This was accomplished by a preliminary incision whereby the finger of the assistant was enabled to pass down to the subclavian as it lay on the first rib on the outside of the scalenus anticus. Then the sac was opened freely and safely and its seven pounds of coagulated blood scooped out. The axillary artery was found to have been probably torn across. Its lower end, bleeding, was first secured, and then the upper end from under a divided lesser pectoral muscle. Complete recovery took place at the end of six weeks.

A further proof of the correctness of the impression that Syme formed—viz., that the extent of an artery either close to or within the sac of an aneurysm is not necessarily unsound beyond the point of rupture, and therefore unfit for ligation—was afforded him in the need to amputate in two instances of axillary aneurysm at the shoulder-joint, the patient's age being fifty-two years in the one case and twenty-two years in the other case. The aneurysms were cut through in the operation, and the arteries tied where they lay within the sac. Undisturbed recovery took place in both cases.

In 1861* Syme thus treated a gluteal aneurysm. In 1862† he yet further corroborated his opinion in a case of iliac aneurysm in which the common—the external and the internal iliac—arteries were tied, and the argument that the size of the tumour does not depend upon the state of the vessel and therefore is not any measure of the extent to which its coats are impaired was again enforced. On April 20th, the aorta being controlled by Professor Lister with a screw clamp, a free incision was made into the sac, six pounds of blood and clot were emptied, the arterial opening into the aneurysm being obscured in its roof, the ligature was applied to this on both

* Transactions of the Royal Medical and Chirurgical Society, 1860.

† Ibid., 1862.

sides, and finally to the internal iliac as well. In all these cases the operation effected a cure.

I have authority to state that Syme did not use any other material than the "small silk" in his arterial ligatures for aneurysm.

It happened that Sir Joseph Lister in 1869, when about to publish his observations on the ligature of arteries on the antiseptic system, read to Mr. Syme the manuscript in the short interval that preceded his apoplectic seizure in that year. The only alteration suggested was, curiously enough, the introduction of the word "small" before "silk," so impressed was he with the value of a diminutive ligature rather than a large one. As a matter of fact, no case of aneurysm occurred in his practice after the catgut ligature, antiseptically prepared and applied, was introduced. Indeed, the catgut ligature was not ready for him before his illness; but he was quite alive to its importance, and took the keenest interest in an account he had received from Mr. Bickersteth,* of Liverpool—his former house surgeon—of a case in which he had used the catgut with perfect success.

In his treatment dealing with wounds Syme had early the greatest aversion to anything like constriction in their treatment. He went so far as to express an opinion that union by the first intention happened more frequently in the days of Taliacotius than it does at present, for the great, I may say infallible, preventive of adhesion—I mean adhesive plaster—was not then invented. Hence followed his disuse of bandages and the use of compresses of linen. He liked the use of ligatures for the vessels with long ends, leaving the two ends hanging outside the wound, which served, he said, as drains for the pent-up blood and serum.

That he was alive to the value of the "antiseptic method" his contribution to the subject in 1868† affords abundant

* *Lancet*, Vol. I. 1869.

† *Brit. Med. Jour.* Jan. 4th, 1868.

testimony. The seven cases he adduces may be read with advantage in the face of our present knowledge of the value of the antiseptic treatment of wounds, as well as in recollection of the difficulties that beset its adoption by the profession when Syme wrote. These consisted of the removal of a parotid tumour, the treatment of a vast wound of the knee-joint, of two compound fractures of the leg—a psoas—and of a chronic and acute abscess. In all there were conspicuous the utter absence of fever, the repair without purulent formation, and its disappearance in the instances of its collection in the abscess cavities when opened. Well might he anticipate that such an improvement promised a great diminution of human suffering and danger. So satisfied was he as to the disappearance of suppuration by the adoption of this method that in his last clinical lecture, with which he concluded the winter course, he records that he had in his later practice abandoned the ligature in favour of torsion, as, this proceeding leaving no foreign body in the wound, he no longer wanted the two long ends.

The evidence advanced is surely sufficiently striking and shows how enthusiastically he entered on the subject of the antiseptic system, and what perfect results he obtained from it with the comparatively imperfect means then at his disposal. Alas, that it should so have been that whilst the record of this conviction was not a year old his first illness took place, and in the summer of 1869 he resigned his chair of Clinical Surgery and his position of surgeon to the Royal Infirmary. The few words of Paterson* rightly convey the attitude of Syme on this question: "Nothing," he says, "can more strikingly illustrate the freshness of his mind at this late period of his professional life than the readiness with which he received so great an innovation upon surgical practice."

As Regius Professor of Clinical Surgery in the University of Edinburgh for thirty-five years—a chair that Syme really founded—an influence was exercised on the progress of surgery and the education of surgeons by the example he afforded

* *Life of James Syme*, Edin, 1874.

that cannot too strongly be enforced. Following the method of Dupuytren, whose plan of teaching he had watched in Paris, Syme introduced the practice of bringing the patients before the assembled students, and pointing out the diagnostic characters to them, then discussing the principles and details of the treatment to be adopted, and either putting it in practice at once before them or, in the case of a major operation, doing it some other day when they were prepared to follow the steps of the procedure with profit. At the bedside a short exact statement of the case led up to the diagnosis, which was briefly and happily explained. What he had to do was done quietly and with deliberation. He was never flurried, and taught as much, if not more, by what he did than by what he said. Specially he had the faculty to train surgeons—he insisted on the value of caution limiting their judgments ere the issue of any given case was fairly apparent. The love of his life was the study of surgical diseases that admitted of cure by operation. Here he was the surgeon in all respects, for though he investigated the action of the periosteum in forming new bone and proved it by facts—now corroborated by more remarkable instances than he then adduced—this was well-nigh the only departure after engaging in practice he took from his favourite pursuits. This contribution to surgical science was entitled, “On the Power of the Periosteum to form New Bone.” *

Syme based his conclusion that the periosteum had the power to form new bone independently of any assistance from the old one from his well-known experiments on the radius of the dog, in which an inch and three-quarters having been removed together with the periosteum it was found at the end of six weeks that no new bone filled up the gap, whereas in the other leg similarly treated, but without the periosteum being removed, which was carefully left entire except where the slit was open

* Transactions of the Royal Society of Edinburgh, vol. xiv. Read March 6th, 1857. Question: “Whether the periosteum or membrane that covers the surfaces of bones possesses the power of forming new osseous substance independently of any assistance from the bone itself.”

in front, it was found that a compact mass of bone occupied and more than filled the space left by the portion removed.*

In his student days, however, Syme appreciated the value of scientific researches, for he worked diligently and under great difficulties at chemistry—his laboratory a cellar, shared with his fellow student Christison.† His discovery of a solvent for caoutchouc in his twentieth year was important, and was permanently valuable to others if not to himself. Throughout his life he was a master of botanical science, both theoretical and practical. Like Brodie, born some sixteen years before him, Syme was, I would maintain, not indifferent to the value of “science” in the study of surgery, and he would, I feel satisfied, have been the first to acknowledge, despite his intense devotion to the “art,” the justice of the comment on Brodie, “whose life was said to have proved to demonstration, by a long and admirable career, that devotion to purely scientific pursuits and a deep interest in all concerning scientific progress may coexist with eminent professional skill, with a philanthropic spirit and an enlarged religious mind.”‡

Further, in the Hunterian Oration delivered at this College on February 14th, 1887, Mr. Savory, our then colleague, discusses the value of a knowledge of physiology to the surgeon, questioning the extent to which it should occupy the attention of the student of surgery, at the same time laying down the principle that “some knowledge of physiology is essential to the surgeon.” With this we shall all agree.

Of Syme it has been said that with him the art of surgery rather advanced than the science. Admitting that in the practice of the art he was supreme, I would ask by what other

* Paget in *Lectures*, 1863 (Ed. Turner), p. 184, referring to the importance of the periosteum in the formation of new bone and confirming the truth of recent observations made in France by Flourens, Ollier, Demarquay, and others in reference to the establishment and extension of this power of the periosteum, speaks of them as “facts” long since proved by Syme and now corroborated.

† Annandale : *Address*, Edinburgh, 1877.

‡ Acland : *Sketch of Brodie’s Life* for the Royal Society.

means than by first mastering its science was he enabled to obtain that knowledge of the principles of surgery which, after long thinking over, he was enabled to apply to its most effective practice as an art. Syme was never in his severest trials of operative surgery, when human life hung on the thread his fingers controlled, like the mariner without his compass; or if strange difficulties arose, as Mr. Savory writes, what then? I answer that Syme ere he started on his voyage first satisfied himself as to the course which his principles mapped out for his adoption; and whatever difficulties, however startling, beset him, the science of his calling, which in its principles he studied and worked out again and again in his career, steadied and aided him and carried him to success in the application of its practice.

Would that the time allotted me permitted of further reference to this subject of science and art in our calling as dealt with by Sir William Savory; I will only say that it comprises in my view all that can be said to rivet our attention to the importance of the union between them being for ever inseparable. Conspicuous amongst Syme's qualities was that of absolute self-reliance. With few friends and less money, wanting a hospital for practice and hopeless of an appointment at the infirmary, during eight years he carried on an independent teaching of systematic surgery and started himself a hospital that lasted for four years and closed to him only when the infirmary doors were opened. Here, says Professor Annandale,* "he originated and practised the method of real clinical teaching which was destined to make his clinical surgical teaching in connexion with the university so complete and so great a reform."

As an operator Syme never contemplated display. Deliberate, absolutely cool, undismayed by the advent of the unexpected, he appeared to have foreseen what would happen and was ready to encounter any emergency. His entire being was concentrated in the one thought—as to the safest means whereby

* Op. cit.

he could relieve his patient. With few instruments, with anatomical knowledge complete for his purpose, he never felt he could fail. If bleeding occurred during an operation it was rare for him to stay the knife. He went straight on and completed the operation, and then arrested all hæmorrhage.

In the past history of eminent surgeons how true it is that a partiality becomes manifest for certain operations to the exclusion of others; perhaps this arises from the knowledge of what it is that we do best. Thus Syme did not excel in lithotomy and hardly practised lithotrity, and it was with difficulty he admitted any value to pressure in the treatment of aneurysm. Stone, it is true, was not as common in Edinburgh as in the northern parts of Scotland, nor as about Norwich or the midland counties, as Warwick and Stafford, in England; hence the opportunities for its frequent performance hardly may be said to have existed.

If on the subjects of excision of joints, of urethral stricture, of amputation at the ankle-joint, and the treatment of aneurysm I have chosen to dwell at some length, it is because on the repute connected with their development and growth inseparably depends the abiding character of Syme's fame as a surgeon. These alone suffice to establish its solid foundation, but the monument would not be complete did I fail to mention yet other examples of his originality and marvellous sagacity in carrying into effect practical surgery with a boldness, in regard to operative treatment, never previously deemed applicable for their relief. He was the first to excise the superior maxillary bone, to subcutaneously divide the sterno-mastoid for wry-neck, and to disarticulate the clavicle. He dealt successfully with the removal of the scapula, together with amputation of the whole extremity. Lastly, he pointed out the exact treatment of an agonising malady—fissure of the rectum.

There must have been with Syme's nature an endowment that enabled him at an early date in his career to undertake formidable operations, to the successful issues of which he was guided alone by the faculty of being

able to think for himself. Here was the keynote of his success, and as he began so he ended. Let me illustrate this, as the whole history of the case I am about to mention abounds with features typical of his surgical character, the soundness of his pathological knowledge, his clearness and accuracy of diagnosis, the immense importance he attached to a serious case, his sanguine confidence when he felt sure of his principles, and his dauntless courage.

In 1827 he removed the greater part of the inferior maxilla in a young man twenty years of age. The growth, which involved the bone, was of enormous size, and had already been examined by Mr. Liston (then his senior colleague in teaching anatomy), who had refused to interfere. "The mouth was closed diagonally across the face, and had suffered such monstrous distension as to measure fifteen inches in circumference. The throat of the patient was almost obliterated in appearance, there being only two inches of it visible above the sternum, so that the cricoid cartilage of the larynx was on a level with that bone. When the tumour was viewed in profile, it extended eight inches from the front of the neck."* Syme having satisfied himself that the tumour was not malignant, and confident in his diagnosis, felt that it was susceptible of removal. Success crowned the work; the result fully justified his practice. The patient completely recovered, and twenty-six years afterwards presented himself, having come from America in perfect health.

When it is borne in mind that Syme was then but twenty-seven years of age, outside the pale of hospital support, and that the removal of tumours of the jaw was a comparative novelty, the striking character of this proof of his operative skill is truly remarkable. Sir Joseph Lister, who possesses this trophy of the ability of his illustrious father-in-law, enables me to afford you an inspection of the specimen and of the picture taken before operating. Sixty-seven years have elapsed since the operation was achieved. The fame of the operator endures,

* *Edin. Med. and Surg. Journ.*, 1828.

and, I venture to say, will endure so long as the story of a great surgical career continues to be held in admiration.

Here I pause. You, my audience of to-day, must be the judges as to whether or not my narrative of the beneficent surroundings that inseparably connect themselves with these measures carried out by Syme for the cure of disease justifies the conclusion that in the contemplation of his professional life we see an authority in the practice of our art approached by few and surpassed by none. I appeal to that wider audience, the members of our calling in these islands, in our colonies, and wherever English surgery is known, to join in agreement with this conviction.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

BY JOHN W. TAYLOR, F.R.C.S., ENG.

SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL
FOR WOMEN.

(Continued from page 344, Vol. xxxvi)

IV.—ABSCCESS OF LABIUM DUE TO RECTAL SUPPURATION OR
FISTULA : (“Peri-proctitis abscedens” :—“Stercoro-vulvaire.”)

In WINCKEL’S Hand-book of Diseases of Women (authorised Translation, edited by Dr. Parvin, 1890), the author, dealing with the subject of vulvo-vaginal abscess (suppuration of Bartholin’s glands) writes as follows :—

“There is, however, another form of abscess met with in this region, which is still more liable to become confounded with those of Bartholin’s glands, viz., abscesses caused by peri-proctitis abscedens, or, as they have been named by the French, *stercoro-vulvaires*.

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In view of the fact, to which we recently called attention, that very large quantities of so-called "condensed milk," practically devoid of fat, are sold, it is of great importance to be able to rely on obtaining condensed milk containing its proper amount of fat, and not made with unwholesome sugars. We are able to recommend the Anglo-Swiss Company's Milkmaid brands as being what they are represented to be, and as thoroughly reliable.

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"I have seen several examples of this variety, even in young persons, associated with peri-proctitis and rectal carcinoma. A careful examination will always reveal the fact that in such cases the rectum was first diseased; we will find hæmorrhoids, swelling, fistulæ and fissures; when the finger is introduced it causes excessive pain, and if fistulæ are present a sound will pass through them as far as or into the rectum. We also discover the swelling in the vicinity and the disease of the rectal wall."

The foregoing forms the only description I can find of an important and special form of labial abscess, which, when it occurs, demands a ready and definite diagnosis; successful treatment of the disease depending on the recognition of its true nature.

My first acquaintance with the subject dates from 1888. At this time Winckel's book was not translated, and I did not know that a good sized abscess in the lower part of the labium could be due to anything but a purely local cause, usually of course suppuration of the vulvo-vaginal gland or duct.

The case which taught me otherwise remains the most striking example of this affection which I have met with, and I cannot do better, I think, than narrate it at once:—

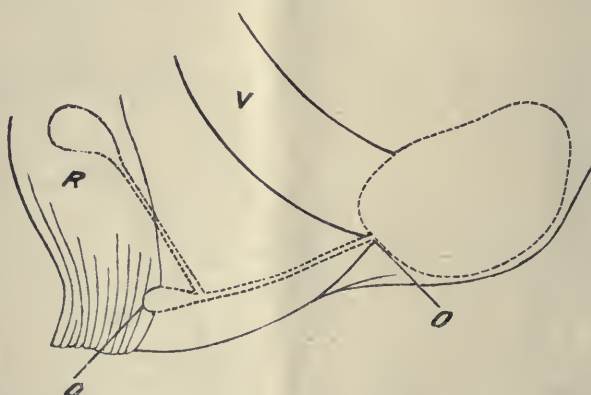
Miss W., aged 34, was seen in consultation with my colleague, Dr. Clark, on Dec. 18th, 1888. For some weeks she had been suffering from an abscess of considerable size in the left labium. This was now discharging from a small opening near the fourchette. Dr. Clark suspected its connection with the rectum, and that it might possibly be due to a fistula. On examination under anæsthesia the pus was found to come from a small opening just in front of the hymen, which was intact, the patient being virginal. A probe introduced into this opening passed into a large cavity in the substance of the left labium majus. No trace of any sinus communicating with the rectum was found. When the probe was in the abscess a prolongation or offshoot of the abscess cavity could be distinctly traced for a little distance under the vaginal mucous membrane.

The opening of the abscess was enlarged with a scalpel, the upper edge of the incision seized with catch-forceps and this portion of the abscess wall cut out with scissors, leaving an opening into which the tip of the finger would pass. No definite lining membrane or sac was found which could be enucleated and removed. The abscess cavity was thoroughly emptied and swabbed out with some iodized phenol.

Consequent on this the swelling of the labium subsided, but no cure was effected. Pus continued to discharge from the same situation as before, and some weeks afterwards, on injection of this sinus, fluid was definitely found to pass into the rectum.

A second examination was therefore made, and the condition found as depicted in the accompanying diagrammatic sketch, with the exception that at this stage the labial abscess had healed. (Fig 1.) The opening of a sinus was found in the

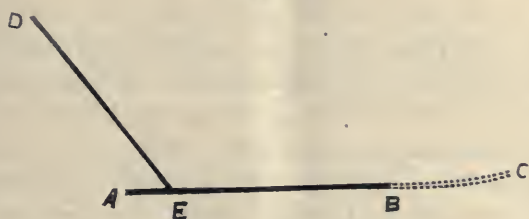
(Fig. 1)



anterior wall of the rectum just above the sphincter (secondary fistula). This communicated directly with the original hole at the vaginal entrance by a long sinus traversing the entire perinæum. Besides this, a lump was found higher up in the rectum, and towards the right side, communicating with the direct perineal sinus by a distinct ridge or cord (primary sinus).

The following operation was done with the thermo-cautery. (Fig. 2.) First, the main perineal sinus was divided from the rectal orifice for three-fourths of its extent (A B), leaving one-fourth at the vaginal end (B C) undivided, so as to save the perineum if possible. This exposed the orifice of the primary sinus (E). Secondly, a probe was passed from the divided sinus through the primary fistula from E to its globular termination at D, and through the mucous membrane in this situation.

(Fig. 2)



The primary fistula (D E) was then completely divided. There was not much bleeding. A cocaine suppository was placed in the rectum, and the wounds were allowed to heal without the application of any special dressing, "healing by granulation" being ensured by the use of the cautery. From this date there was no further difficulty; the patient made a good recovery.

The course of the disease appears to have been as follows:—

A suppurative peri-proctitis occurred high up forming the abscess cavity at "D." This burrowed as far as the perinæum, and was then deflected forwards to the left labium where the bulk of the pus collected. This was the condition at our first consultation. Later on, a secondary opening formed into the rectum or rather anus, just above the sphincter, and thus completed a direct channel between the anus and vulva as found on operation.

I have frequently had the opportunity of enquiring about the health of this patient and, so far as I can ascertain, she has remained well ever since the operation, and has no incontinence of *fæces* or impairment of the sphincter. I have not had the opportunity of personally examining the parts since the date of operation.

It occasionally happens, especially amongst patients of consumptive family, that we meet with a subacute or chronic ischio-rectal abscess that has no opening either into the rectum or outwards toward the perinæum or vulva, but may be felt as a resilient, tender, egg-shaped tumour, occupying the fossa at one side of the median raphe and projecting slightly into the rectum at one end and into the vagina or vulva at the other.

The following recent case appears to have been of this description.

Mrs. A. S., aged 30, was sent to me by Dr. Treston on October 29th, 1894. She complained of "swelling and pain on the left side of the front passage." The pain was of a throbbing and burning character, and had kept her awake at night.

On examination, I found a definitely bounded, resilient, oval little tumour somewhat deeply seated in the perinæum to the left of the middle line. Its long axis was antero-posterior, and consequently the ends of the swelling were directed towards the vulva and rectum respectively, and the tumour itself was much more prominent in these situations than externally. It had been forming slowly for nearly two months since the date of a premature confinement which occurred on September 9th. No trace of any opening could be found in the rectum, and the tenseness of the sac precluded the possibility of this. The patient had a consumptive family history, her brother having died of phthisis.

I diagnosed the swelling to be a small abscess resulting from peri-proctitis, and advised a perinæal incision. The patient was advised to take cod liver oil.

Such abscesses, like many other strumous affections of considerable severity, may slowly disappear under good hygienic conditions and the administration of cod liver oil, but it is better to evacuate them by a perinæal incision under anæsthesia. I think that a chronic strumous abscess of this kind, when neglected, is far more likely to terminate in a true "stercorovulvaire" than is an acute inflammatory abscess, for the latter,

even if left alone, will usually open at a reasonable distance from the anal margin.

The question of treatment in a case of true "stercorovulvaire" forms a problem of considerable difficulty. When due to cancer of the rectum only palliative measures are admissible unless the cancer of the bowel can be entirely removed. When due to strumous peri-proctitis, while the general constitutional condition must not be neglected, the treatment will be essentially surgical. The abscess or abscesses—and sinuses connected with these—must be laid freely open to effect a cure of the disease, but it is impossible to do this in many cases without danger of lasting injury to the perinæum and sphincter. How can this be avoided? It seems very natural to suppose that these cases of anterior fistulæ in women are the very ones in which it would be wiser to practice complete excision of the fistulous tract or tracts with immediate closure of the wounds by suture.

From my own experience I cannot advise this. Every now and then, after operation for rupture of the perinæum (extending some distance up into the rectum) a little fæcal extravasation occurs at the deepest part of the wound and a fistula forms between rectum and vulva, or rectum and perinæum. I have occasionally tried excision of these and with such poor success that I do not feel inclined to repeat the operation. I have removed the fistulous tract from end to end in one continuous tube without a break, and yet the fistula has slowly re-formed in exactly the same situation as before. It seems to me that for some distance or depth around the fistula there must be infection of the tissues by fæcal germs, and these tend to prevent immediate union after suture, especially in unhealthy subjects.

For this reason I think the operation of freely laying open all fistulæ by the thermo-cautery is much the better. The wound granulates from the bottom and healing of the fistula is a certain thing. Then, if the sphincter and perinæum have suffered in the process, a secondary operation must be performed. A small flap-splitting operation is done at the anal margin. The sphincter

is resutured and its function restored. The following diagrams will explain the little operation to any who may not be familiar with its details.

Fig. 3.



Fig. 4.



The dotted line represents the sphincter. In Fig. 3 we see its free (ununitd) ends terminating at the base of an anterior perinæal cleft or angle. The margins of this cleft *and the ends of the sphincter* are thoroughly divided just outside the anus by scissors or scalpel. This is represented by the thick black line outside the cleft. The anal mucous membrane (including the anal lining of the cleft) is now turned backwards into the anus, and the raw anterior surfaces are united by sutures of silkworm gut, the suture nearest the re-formed anus deeply and thoroughly coadjusting the ends and completing the circuit of the sphincter muscle (see Fig. 4). The operation is easy, and if properly done the result is eminently satisfactory.

NOTES ON THE USE OF OXYGEN INHALATIONS.*

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WHEN I undertook to read a paper before this Society on the subject of the therapeutic use of inhalations of oxygen, I was under the impression that during my period of residence at the General Hospital I had used these inhalations in a large number of cases. I am still under that impression; but unfortunately, when I came to look up the matter, I found that I had lost or

* Read before the Midland Medical Society, April 18th, 1894.

destroyed all notes of the cases, and that I was able to recollect but a portion only of the whole number. I am therefore unable to relate my own experience with as much detail as I could wish ; but perhaps, as the results at which I arrived were fairly uniform, and are quite defined in my recollection, the absence of such detail is of comparatively slight importance.

I was led originally to choose this treatment as the subject of my paper mainly because it is one which has come very prominently into notice during the last few years, about which very conflicting statements have been made, and the real value of which in therapeutics remains still to a large extent undecided ; not because I have myself a large amount of faith in its efficacy, except under certain special and limited conditions. Such a subject is, I think, a fair and perhaps important one for discussion ; and I am the more satisfied to bring it forward, inasmuch as it has not yet been dealt with at any of our societies. The only allusion to it that I have yet heard in this room occurred in Dr. Simon's recent paper on pneumonia, in which, speaking of the various methods which may be adopted for the relief of the "dyspnœa and distress that are symptoms of some cases," he says : "So far as my experience goes, I have never seen more than the most fleeting advantage from the use of oxygen, and, as I feel to-day, shall never use it again ;" and it is worth noting that in the long discussion which followed that paper, not one of the speakers even alluded to the subject. With Dr. Simon's opinion of the use of oxygen for the relief of the dyspnœa and distress of pneumonia I am in entire agreement ; but I do not think that, when that has been said, the matter has been entirely disposed of.

The theoretical aspect of the question has, I think, received too little attention. Physiological investigations have completely proved, not only that the maximum quantity of oxygen which can be taken up by a given amount of hæmoglobin is a fixed and definite quantity, but that the hæmoglobin of ordinary arterial blood is almost completely saturated with oxygen ; and that, even when exposed to that gas under high pressure, a very

small additional amount indeed is taken up. That is to say, the partial pressure of the oxygen as it exists under ordinary conditions in the pulmonary alveoli, is amply sufficient to cause nearly complete saturation of the hæmoglobin of the venous blood; and simply by increasing the proportion of oxygen, without subjecting it to additional pressure, no increase in the amount absorbed will take place. It is hard to see, therefore, from this point of view, what advantage can possibly be gained by inhaling the gas, so long as the atmospheric air has free access to the lungs, and the blood reaching the pulmonary capillaries is in the condition of ordinary venous blood.

In cases of asphyxia, however, not only is the pulmonary blood more than ordinarily deoxygenated, but the last traces of oxygen in the alveoli of the lungs become used up and replaced by carbonic acid; and it might appear not irrational to suppose that, whilst the oxygen of the atmospheric air is fully capable of meeting the demands of ordinary venous blood, it might fail to supply the extra quantity required under these conditions. This idea is, however, disproved by the following evidence. In October, 1893, there appeared the report of a Committee appointed by the British Medical Association to investigate the suggested usefulness of oxygen inhalations in cases of asphyxial poisoning in coal mines. The conclusions of that report are further amplified by Dr. Ernest Thomson, one of the members of the Committee, who published in the *Glasgow Medical Journal* for Nov. and Dec., 1893, and Jan., 1894, the details of a large number of experiments performed to elucidate this point. These experiments consisted in the artificial asphyxiation of rabbits, followed by their exposure to various gases, including oxygen and atmospheric air. The conclusion arrived at is to the effect that under no conditions is oxygen "one whit more rapid in its restoring action than atmospheric air similarly applied."

These facts in themselves appear to me to afford good reason for receiving with caution the reports which have been published in the medical journals of the good effects of oxygen inhalations in cases of anæmia, cardiac failure, Bright's disease, etc.; and also

oblige us to finally abandon any attempt to relieve dyspnoea by means of the super-oxygenation of the blood. I may also note here that they equally dispose of a theoretical objection which has been raised to the treatment generally, on the ground that an increased quantity of oxygen in the air inhaled is likely to lead to an increase in the oxidation of the tissues, and a corresponding accumulation of carbonic acid. This, it is said, may fail to be eliminated, and thus in itself produce a condition of asphyxia. Such an objection is based on the idea that it is possible to overcharge the blood with oxygen, and not upon any practical evidence; and this idea is completely disproved by the foregoing facts.

But, although great doubt is thus thrown upon the possibility of obtaining benefit from the use of oxygen in cardiac, hæmic, and most forms of pulmonary dyspnoea, the evidence does not, I think, apply at all to cases of diminished entry of air into the chest, whether due to obstruction or to failure of the respiratory act. Here, it seems to me that it will obviously be of importance to increase the proportion of oxygen in the air inhaled; for, not only is the total intake of the gas diminished, but there is also probably an increase in the extent of that portion of the pulmonary air which is never actively changed, in which the oxygen becomes renewed by a process of diffusion, and there is always therefore a tendency towards the accumulation of carbonic acid. It is also noted in the report and papers already quoted, that the evidence is not necessarily quite conclusive when applied to cases of pneumonia, in which there is an actual diminution in the extent of the respiratory surface, and the conditions of the problem are therefore altered in an important particular. Dr. Thomson accordingly suggests that, if it be necessary to admit that oxygen is of service in the treatment of pneumonia—which he greatly doubts—the explanation may possibly lie in the partial blocking of the pulmonary capillaries, which he supposes to be the result of the consolidation of pneumonia. This—if we understand him correctly—may, he thinks, cause such a hurrying of the blood through the more healthy

parts of the lung, that either the oxygen contained in the alveoli of those parts becomes used up more rapidly than usual, or proper time is not allowed for the necessary interchange between the blood and air; in which case a beneficial effect from the use of oxygen might possibly become intelligible. Dr. Thomson admits the unsatisfactoriness of this explanation; and to my mind the assumption on which it rests—namely, the partial obstruction of the circulation of the consolidated areas, and a correspondingly increased passage of blood through the more healthy parts,—is a doubtful one. Moreover, my own experience of the use of oxygen in pneumonia goes to shew, as I shall have shortly to relate, that it is ordinarily quite powerless to alter either the rate or volume of the respirations, or even to relieve the patient's sense of dyspnœa, and affords no support, therefore, to the idea that a need for a more liberal supply of oxygen is an important factor in the breathlessness of pneumonia.

There appears to me to be another explanation of the occasional good effect of oxygen in pneumonia—in which I firmly believe—which may better meet the requirements of the case. Although, as I have said, my own experience points to the absolute uselessness of oxygen in the treatment of an ordinary case of pneumonia, yet in one instance, in which the patient was comatose, and had been in that condition for some hours, its inhalation certainly produced a most striking effect. It would of course be absurd to base any certain conclusion on a single case, but I may point out that the condition of coma has been present in nearly all the recorded cases of pneumonia in which this treatment has been beneficial; and I may suggest that the shallow and inefficient respiratory movements which are always a marked feature of such cases may possibly fail to introduce a sufficient quantity of air into the lungs to cause the necessary renewal of the oxygen in the pulmonary alveoli; that hence a gradual accumulation of carbonic acid may occur, with a resulting slow asphyxiation; and that the circulation of the imperfectly aerated blood will not only result in coma, but will also impede the heart, and give rise in its turn to those signs of

additional cardiac failure on which so much stress has always been laid in the published records. In that case the inhalation of a still diminished *quantity* of air in which the *proportion* of oxygen is increased will necessarily restore the process of blood aeration, and so put an end to the condition of semi-asphyxia, which is acting the part of the proverbial last straw. In this explanation, therefore, the inhalation simply secures the passage into the lungs of the normal amount of oxygen, and the action of the treatment is identical with that which obtains in cases of actual obstruction to the entry of air into the chest.

Whatever be the theory adopted, however, as to the mode of action of these inhalations, there is a considerable mass of clinical evidence in favour of the view that in some morbid conditions they do produce a very distinct effect on the respiratory process. Although used in isolated cases and by isolated practitioners for several years previously, the attention of the profession was first prominently called to this method of treatment in Jan, 1892, by a case of pneumonia reported by Drs. Lauder Brunton and Prickett, in which inhalations of oxygen apparently produced a most striking, though unfortunately only temporary effect. As this case closely resembles in its principal features one which I wish to describe a little further on, I need not quote its details, only pointing out that here also the patient was completely comatose at the time at which the inhalations were commenced. The description of this case was followed by an outbreak in the medical journals of reports of the use of oxygen in all sorts and conditions of respiratory disorder, and it is a matter of some little difficulty to sift these reports so as to arrive at any very clear result from them. Putting aside, for the present all the cases of pneumonia, there would seem to be a considerable mass of clinical evidence to show that oxygen inhalations are useful in relieving the dyspnoea of laryngeal obstruction and possibly of asthma, and in cases where for any reason the respiratory act temporarily fails, as in a case of opium poisoning, reported by Dr. Frederick Taylor, in which the

respirations had dropped as low as eight per minute. In all these cases there is deficient entry of air into the chest, and the good effect of the inhalations is therefore quite intelligible. There is an almost unanimous agreement, on the other hand, that the inhalations are useless in cases of acute and chronic bronchitis, and broncho-pneumonia; whilst the evidence in favour of their beneficial effect in cases of phthisis is very unsatisfactory. I should like, however, to note in passing that in the only case of acute bronchitis, as far as I have seen, in which a beneficial effect has been recorded, the patient had been comatose for some hours before the inhalations were begun.

Not only, however, has oxygen been used for dyspnoea of pulmonary origin, but it has been given a much more extended trial. Two conditions only need, I think, be mentioned, namely, heart failure from any cause, and anæmia, for both of which the use of oxygen has been extensively and weightily recommended. Of the former, many accounts have been published of cases in which marked improvement and relief has been thought to follow the inhalation of oxygen; and I wish fully to admit that several of these cases are reported with so much definiteness, and sometimes with so much detail, that it is impossible to avoid attaching considerable weight to them. Unfortunately, theoretical considerations entirely fail to account for these phenomena; for in the dyspnoea of cardiac failure, the defect lies entirely in the circulation, and not in the supply of air—that is to say, the required amount of oxygen is forthcoming in abundance, but the blood is unable to get to it. It therefore seems to me that it would be as rational in principle to administer large doses of digitalis for the relief of the dyspnoea of laryngeal obstruction, as it is to use oxygen in the treatment of that of cardiac failure. Nevertheless, if theory turns out to be really opposed to practical experience, it must of course give way; and although my own limited acquaintance with the use of oxygen in these cases affords every reason to doubt its efficiency, I do not wish for a moment to ignore the evidence afforded in its favour by these recorded cases.

Indeed, I may here fully acknowledge that, in the face of adequate clinical experience, a scientific explanation of the working of the remedy, though much to be desired, is not absolutely essential.

In the case of anæmia, the records are much less definite and trustworthy, and seldom contain more than the statement that the patients "greatly improved" under the use of oxygen; no details being given of the direction in which the improvement has manifested itself. Moreover, the insufficiency of the evidence on which in some cases a belief in the efficacy of oxygen has been based is well illustrated by the fact that in not a few of these records the administration of oxygen has been combined with the internal use of iron. In this matter, however, I again have the weight of genuine authority against me; and I may especially quote a statement made by Dr. Frederick Taylor to the effect that he had used oxygen in a case of leucocythæmia, and had never seen such a marked benefit from any other method of treatment—not, however, in itself a necessarily very strong statement. It seems to me that not only do anæmic patients "greatly improve" under other forms of medical treatment, and sometimes even under no drug treatment at all, but that theory is more strongly opposed than ever to a belief in the beneficial effect of oxygen in this disorder; for if the oxygen of the atmospheric air is amply sufficient to cause nearly complete saturation of the hæmoglobin of the blood in health, surely it must still more be able to satisfy the needs of the body in cases in which the amount of hæmoglobin is diminished, and generally very greatly diminished. I am bound to say therefore that, much as I doubt the usefulness of oxygen in cases of heart failure, I am still more sceptical as to its value in the treatment of anæmia.

Coming to my own experience, I am sorry to say that, with the exception of one case only, it by no means supports the favourable opinions formed by many physicians of this treatment. The inhalations were given according to one of two methods. In the majority of the cases, the administration was intermittent,

lasting for ten minutes at a time, and being repeated at shorter or longer intervals, according to the nature and severity of the case; in others, it was continued without intermission for a considerable period.

The list of cases (as far as I can recall them) in which the intermittent method of administration was adopted, includes cases of pneumonia, acute and chronic bronchitis, phthisis, mitral disease, aortic disease, aneurism, acute nephritis with uræmic symptoms, and pernicious anæmia, and therefore contains examples of most of the important causes of dyspnœa—pulmonary, cardiac or hæmic. I may sum up my experience of the treatment in all these cases by saying that in not one of them was I able to satisfy myself that any effect, either for good or evil, was produced. In many of the cases I recorded for my own satisfaction the rate of the pulse and respiration before and after the inhalation, and in all I paid attention to these points, and in not one could I detect any definite change in any direction. I do not consider that the dyspnœa, from whatever cause arising, was at all relieved; nor did the patients as a rule express themselves as feeling in any way more comfortable for the treatment, though in a few cases, I think that the imagination was perhaps somewhat impressed by the apparatus used, and that a little corresponding mental relief resulted.

The cases in which the gas was given continuously were only three in number—namely, two of pneumonia, and one of diabetic coma. The latter I may at once dismiss with the statement that no effect whatever was produced, although the subsequent injection of saline fluid did afterwards succeed in rousing the patient to a condition of semi-consciousness for a few moments. The cases of pneumonia include the one instance of benefit from the inhalation of oxygen which I have yet come across, and this benefit was to my mind so remarkable that I may perhaps be allowed to describe the case in detail. The patient, an ill-nourished man, aged 26, was admitted into the General Hospital one day about noon, with a history of nine days' illness, and all the signs of a severe attack of pneumonia. He had kept at

work till three days previously, had finally walked some distance to the hospital, and was on admission evidently in a desperate state. Towards midnight of the same day he was becoming very drowsy; and his respirations were described in the notes as being rapid and sighing, and accompanied by much mucous rattling. At 3 a.m. next morning, he was quite unconscious, and the administration of oxygen for the usual 10 or 15 minutes produced no effect. At 9 a.m., he was apparently within an hour of death. He had been entirely unconscious for over six hours; his colour was livid, skin cold and clammy, pulse scarcely to be felt, and respirations shallow and rapid. Remembering the description of Dr. Lauder Brunton's case, I determined to try whether the continuous administration of oxygen would by any chance produce any improvement in the condition, though without, I think, the slightest belief in the possibility of such an event. I accordingly gave it without cessation until 10-15 a.m.—that is for an hour and a quarter—at the end of which time, to my great surprise, not only had the colour become good, the sweating ceased, and the pulse become regular and comparatively strong, but the patient sat up, took food, and answered questions rationally. At this point the satisfactory part of the narrative ends. I was called away to another ward, and thinking that the inhalations might now fairly be stopped for a time, made no arrangements for continuing them. I was away for about half an hour, and at the end of that time was disappointed to find that the patient had relapsed into his former condition, in which he died half an hour later in spite of the renewal of the inhalations. Notwithstanding the unsatisfactory ending, I cannot help being greatly impressed by this case; and I think that anyone realising the condition of a pneumonic patient who has been unconscious for more than six hours, and who, as the result shewed, was actually within an hour or so of death, must admit that a method of treatment which can produce a degree of consciousness sufficient to enable the patient to sit up, talk, and take food, is one which cannot be put aside altogether as

unworthy of attention and fair trial in suitable cases. I am of course well aware of the difficulty of realising or even believing in the account of such a case to those who have had no similar experience; but, to the best of my belief, the foregoing report is absolutely accurate.

I did not realise at that time, so far as I remember, what I now believe to be the special peculiarity in this case which rendered it a favourable one for the exhibition of oxygen, and the only inference that I drew from it was that the inhalations, to be of any material service, must be continued for a considerable period of time. I accordingly determined to repeat the experiment with the next case of pneumonia which should be sufficiently bad to make the trial a crucial one. This case happened to be an extremely serious one of double pneumonia, in which the patient evidently had from the first but a poor chance of pulling through his illness. When suffering from great dyspnoea, and in a condition of much distress—although still perfectly conscious, and a day or two before his death—I gave him oxygen continuously for three-quarters of an hour, but at the end of that time, as there was not only no improvement whatever in signs or symptoms, but the effort of inhaling the gas appeared to add if anything to the patient's distress, I stopped the inhalation at that point. Shortly afterwards my term of hospital residence came to an end, and I have had no opportunity of practically investigating the matter further.

The continuance of coma for many hours before death, to my mind, marks the first of these two cases as an unusual one; for, according to my own experience, pneumonic patients as a rule remain more or less conscious almost up to the very end. If it be true, as I think, that this coma is at least sometimes the expression of a slowly occurring condition of asphyxia due to deficient respiratory movements, then its presence may be taken as an indication that the case may be a suitable one for the oxygen treatment; but I do not by that mean to say that the absence of coma necessarily means that oxygen will be of no avail, since there must obviously be a pre-comatose stage, in

which the respiratory act is only as yet beginning to fail. One other point only remains to be noted. It is quite within the bounds of possibility that the sudden cessation of the inhalations may be followed by a dangerous reaction, and I am not at all sure that my own case may not be one in point. This consideration is an additional reason for continuing the inhalations without intermission, when once they have been begun; and I think it impossible to say what would have been the final effect, had I done so in the case which I have quoted.

In conclusion, I may sum up the results of my paper as follows:—I believe that the administration of oxygen is a rational treatment in all cases in which there is a deficient entry of air into the lungs. I also believe that this is the only condition in which it is possible to explain the good effect of this treatment, and my own experience is in favour of the belief that it is the only condition in which any such good effect really occurs. With regard, however, to certain other conditions, especially those of anæmia and heart failure, a certain amount of strong clinical evidence has been brought forward in support of the belief in their suitability for such treatment. I should therefore be inclined to make further investigations in those directions, although my own position at present in the matter is one of great doubt. It is undoubtedly the case that oxygen inhalations produce a very strikingly beneficial effect in certain exceptional cases of pneumonia, probably typically those in which a condition of coma exists an appreciable time before death; and it would appear to be the most rational explanation of such cases to suppose that, through failure of the respirations, an insufficient quantity of air has for some time been introduced into the chest. Finally, these inhalations will prove ultimately useless, in these cases of pneumonia, and possibly worse than useless unless they are continued steadily when once begun; and I should myself be prepared, if I used them at all, to continue them in such a case until the patient either was dead or had come to his crisis. Whether or no, when given in this way, they will have any permanently beneficial effect is a point to be decided by further experience.

NOTES ON THE URINE IN TYPHOID FEVER.

BY S. HERBERT PERRY, M.B. LOND.

I.—THE VALUE OF EHRLICH'S DIAZO REACTION.

FOR the performance of this reaction two solutions are used, which may be respectively called A and B.

A. A saturated aqueous solution of sulphanilic acid containing 5 per cent. of hydrochloric acid.

B. A $\frac{1}{2}$ per cent. solution of sodium nitrite.

These solutions are mixed in the proportion of 200 cc. of A to 5 cc. of B, and of the resulting mixture a quantity is added equal to the urine to be tested. A small quantity of strong solution of ammonia is then added, and the liquid is shaken or stirred freely. The reaction, if present, consists of two stages—(1) an immediate colour reaction; (2) a precipitate, forming in from one to twelve hours.

The typical colour varies from scarlet to a deep crimson-lake, and may be accompanied by a corresponding tinge on the foam of the liquid. The second and most definite part of the reaction consists of a precipitate which forms, as a rule, in under twelve hours. This precipitate is typically olive or blue-green in colour, but may be light brown with an olive-green upper layer.

After personally performing over a thousand of these tests, I have come to the conclusion that the red colour reaction alone is too uncertain and indefinite to be regarded as a test of any value, and that the formation of the blue-green precipitate is the part of the test which should be regarded as being of positive evidence. The evidence from mere colour reaction will obviously depend largely on the personal equation of individual observers, and possibly to this may be attributed the very varying expressions of opinion as to the value of this reaction. No doubt in some instances the scarlet colouration is so definite as to be quite unmistakeable; but, on the other

hand, I have noticed not infrequently that a marked green precipitate may follow where no positive evidence could have been obtained from the preceding red colouration. More commonly a doubtful red colour is not followed by any green precipitate, but merely by a light brown precipitate. These varying degrees of the reaction may all be seen typically in typhoid urine. It seems that the blue-green coloured precipitate is the most advanced stage of the reaction, but by using it as the test and ignoring the question of a previous red or scarlet colour, one is enabled to take up a more definite standpoint as regards the reaction, and I think to distinctly increase the value of it.

The complete reaction is, as a rule, present in typhoid fever, but is certainly not so in most other febrile states, although in these a very fair degree of red colouration is commonly obtained. In the following cases, therefore, diazo-reaction implies the formation of the above-described blue-green precipitate.

Disease.	Number of Cases.	Number giving Diazo-reaction.
Typhoid	25	20
Acute Croupous Pneumonia ...	15	—
Influenza	10	—
Pulmonary Tuberculosis	15	1 (slight)
Acute Rheumatism	15	—

Other diseases in which the urine was tested were—acute and chronic nephritis (10 cases), scarlet fever, sarcoma and carcinoma, none of which gave the reaction; but it is described as rarely occurring in all of them.

All the above groups of cases were taken as they came. Of the typhoid cases two died within twenty-four hours of admission to hospital; and the fact that many typhoid cases are first seen late on in the disease will fairly account for the absence of the reaction in the remaining three cases.

The reaction is described by many observers as occurring fairly often in acute pneumonia, but in my experience it is decidedly rare, and I had only once seen it definitely given in

this disease. The ten cases of influenza included three of what is commonly known as the gastric type of this disease, a condition which may simulate closely the commencement of typhoid. I have never seen the reaction present in influenza. After typhoid, pulmonary tuberculosis appears to be the disease in which the diazo-reaction is most often met with, more especially if the disease be a miliary tuberculosis, which was the case in the above-quoted single instance in which the reaction appeared. It seems to be generally agreed that the reaction is not given in acute rheumatism. The important point is, that whereas in typhoid the reaction is commonly present and lasts for several days, in other febrile states the reaction is rarely present and probably lasts for one day only.

There is some doubt as to the period of typhoid at which the reaction is first seen. It may certainly be present while the temperature is rising during the first week, and is even described as occurring in afebrile typhoid. The reaction is commonly present during the second week, and may be absent after this, so that failure to obtain it is easily accounted for in many cases, owing to the fact that many typhoid cases are not seen until after the second week. As a rule the reaction reappears during relapse of any severity. The duration of the reaction is very variable—the longest time in the above twenty cases was ten days—the average being four days. Even in bad cases, however, the reaction may only be obtained during two or three days, and in slighter cases for one day only. In the typhoid cases quoted, the urine was examined daily until the patient was well past the febrile period, and in the other diseases during the febrile period only. When once the reaction has disappeared during two or three days it does not reappear, except during relapse.

As regards the value of this reaction as an indication of typhoid fever, there is much difference of opinion. Since Ehrlich first introduced the test, in 1882, there has been extensive writing on the subject, probably the most complete investigations being those of Von Noorden. The general tendency

of the most modern writers seems to be to give a guarded opinion in favour of the test, but it is frequently difficult to gather what the observer considers exactly constitutes the full reaction. Of the opponents of the reaction, Von Jaksch makes the most definite statement. He says: "The author's experience would induce him to disclaim for this test any clinical importance whatever, and he would especially enjoin the necessity of avoiding inferences based on the reaction." Here, again, the reaction is not fully stated, and we are left in considerable doubt as to the author's conception of it.

As regards the chemical nature of the reaction nothing very definite is known. Von Noorden believes that the reaction is caused by the action of the diazo-benzene-sulphonic acid on nitrogenous substances the nature of which is unknown. Von Jaksch believes that the reaction is due to the presence of acetone, but he appears to regard the scarlet colour as the full test. I have several times tried the diazo test on diabetic urine which was proved (by Legal's test) to be loaded with acetone, and have always failed, nor can the test for acetone be obtained in urine giving a very marked diazo reaction. Hewetson, writing in the Johns Hopkins Hospital Reports, finds the reaction in 136 out of 196 cases, and quotes Von Noorden as stating that this reaction is "so constantly found in typhoid fever that if it be absent, one must doubt the diagnosis," a statement which is quite in agreement with my limited experience.

REFERENCES.

Von Jaksch : Clinical Diagnosis.

Von Noorden : Lehrbuch der Pathologie des Stoffwechsels.

Hewetson : Johns Hopkins Hospital Reports, Vol. iv., No. 1.

II.—INDICANURIA.

Urinary indican is the potassium salt of indoxyl-sulphuric acid, the antecedent of which is the indol formed in the intestine as the result of albuminous putrefaction.

Indican is present in the urine of typhoid patients to a marked extent from the commencement to the end of the

illness; it is probably the latest condition of all to clear up, and I have found indican well marked in the urine of a patient who had left the hospital three weeks back, and who was to all appearances in good health.

From experiment we know that indol is formed—with skatol and other products—as the result of putrefactive pancreatic digestion; it is not a product of pure pancreatic digestion, but of an accompanying decomposition due to the action of bacteria. If experimental pancreatic digestion be performed, the formation of indol can be easily prevented by the addition of thymol or salicylic acid.

Typhoid urine during the febrile stage is typically of a dark brown colour, a colour which is usually associated with the presence of indican, but which it should be remembered is due not to indican, but to higher oxidation products of indol. In performing Jaffé's test for indican, it is not unusual to get—on the addition of the strong hydrochloric acid—a reddish violet colouration, due to the action of the acid on skatoxyl products.

Seeing the ease with which the formation of indol and skatol can be prevented in experimental digestion, it seems reasonable to expect that substances—such as salol—which influence this experimental digestion would have some similar effect in the intestine itself. The only drugs I have had the opportunity of watching have been salol, turpentine, and chlorine solution; but in no instance was any definite effect produced on the excretion of indican. The above drugs were being exhibited in the usual doses—salol, gr. x. or xx., and turpentine, ℥ x. or xx.—every four hours. It is probable that the salol has some antiseptic action in the duodenum, but being rapidly absorbed after decomposition, it could not penetrate to the lower parts of the intestine, where the indol is chiefly formed.

There is not any obvious difference in the extent of indicanuria in the diarrhoea and constipation of typhoid, but the cases in which I found most indican were those of a severe type with constipation. This one would naturally expect, for a large amount of indicanuria would naturally be associated

with a great degree of intestinal saprophytic growth; and, as regards the severe type of disease, it is interesting that Armand Ruffer has pointed out that the toxic products of certain saprophytes (the group known as *bacillus coli*) are able to increase the virulence of typhoid bacilli.

It seemed also possible that excessive indicanuria, or other products associated and absorbed with indican, might have some connection with the anæmia which sometimes follows typhoid fever. Many observers speak of a slight anæmia as being not uncommon in typhoid convalescents, although anything approaching a grave anæmia is decidedly of rare occurrence. Taking, however, the fifteen cases in the urine of which the indican was most marked, I did not find any definite anæmia. The main blood changes were a slight gradual decrease in red and white corpuscles throughout the disease, with a rapid rise to normal during convalescence, and a similar fall and rise in hæmoglobin, but relatively greater than the corpuscular variation. There was in these cases, therefore, no definite anæmia associated with the extensive and persistent indicanuria. It has however seemed to me that cases in which indicanuria persists into convalescence are more liable than others to the post-typhoid gastric symptoms so frequently seen. One should not call a typhoid patient healthy until the urine is free from indican.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The third ordinary meeting of this Branch was held on Thursday, December 13th, Mr. H. LANGLEY BROWNE, President, in the chair. There were present 46 members.

The following were elected members of the Branch:—H. W. Gardner, M.D., Shrewsbury; T. S. Allan, L.R.C.P., Coventry; H. Fowler, M.D., Bristol road, Birmingham.

A Sub-committee of the Branch was appointed to consider and report on the schemes proposed in connection with the registration of midwives.

A Sub-committee of the Branch was appointed to consider and report upon the Draft Bill to amend the Medical Act submitted by the Parliamentary Bills Committee.

Living Cases.—Mr. Albert Lucas showed a man, aged 58, with a cured aneurism of the common femoral artery. On July 14th of this year he was kicked in the groin; five weeks later a pulsating swelling appeared. On admission to the General Hospital on September 21st, it was found that he had an aneurism of the common femoral, extending from an inch above Poupart's ligament to nearly the apex of Scarpa's triangle. On October 3rd the external iliac was ligatured by means of an incision higher and more external than Abernethy's. Ballance and Edmunds' "stay knot" was used. Three weeks later some redness was noticed over the front of the leg. This increased, and eventually the anterior tibial muscles sloughed out. On November 9th, amputation of thigh at junction of lower one-fourth with upper three-fourths was performed; muscle flaps. Wounds healed by first intention. Aneurism now quite solid, and not larger than a walnut.

Mr. Lloyd-Owen showed a case of complete removal of eyelids and contents of orbit for rapidly-growing sarcoma within the orbit. To conceal the effects of this extensive operation, Messrs. Salt and Son, of Birmingham, made an eye for the patient, around which they modelled lids and a substitute for a considerable portion of tissue removed, in a species of vulcanite, this artificial portion fitting exactly, and being held in position by attachment to the bows of a suitable pair of spectacles (following an invention for which a patent was obtained some months ago for the construction of artificial eyes for cases of this description), and matching the opposite side of the face in colour and form. The lost expression is thus restored to the subject of an extensive mutilation. This invention is admirably contrived to conceal the deficiency in all cases of patients.

unable to wear an ordinary artificial eye (owing to shrunken socket, soreness, or other causes), in the majority of which cases artificial lids only require to be moulded, and the concealment is much more simple to effect than in the striking example shewn.

Excision of Epitheliomatous Glands in Neck.—Mr. Barling showed a man, aged 50, from whose lower lip an epithelioma was excised in October, 1890. In March, 1892, a mass of glands, together with the involved sub-maxillary salivary gland, were removed, the sub-maxillary fossa being well cleared out. In June, 1892, there was extensive recurrence reaching from the angle of the jaw to the side of the larynx, and involving the anterior part of the sterno-mastoid muscles. With but little hope of giving permanent relief an extensive dissection was made to extirpate the diseased parts, and at the present time, $2\frac{1}{2}$ years after the last operation, the patient remains well and in robust health.

Mr. Barling read: "A Further Note on the Mortality of Operations for Vesical Calculus," which will later be published.

Mr. Leedham-Green read a paper on "A Method of Restoring Persons Apparently Dead from Chloroform."

PATHOLOGICAL AND CLINICAL SECTION.

November 30th, 1894, Dr. MALINS in the Chair.

Spurious Hermaphroditism.—Mr. Christopher Martin showed a case of spurious hermaphroditism—a person with the external genitals and general characteristics of a woman, but with the essential organs of a man. He was 21 years old, had been brought up as a woman, and had earned his living as a nurse-maid, kitchen-maid, and bar-maid. In February, 1894, he consulted Mr. Martin with reference to a painful swelling in the left inguinal region. Mr. Martin cut down on this and removed a body which proved to be an undoubted testis. The patient's voice was rather low pitched, but not masculine. There was no trace of beard, whiskers, or moustache. The breasts were flat

and poorly developed. There was no hair on the external genitals. These exactly resembled those of a woman, consisting of labia minora and majora, a vestibule with the meatus urinarius, a *small* clitoris, and a vaginal ostium with the remains of the hymen. The vagina was a blind cul-de-sac $1\frac{1}{2}$ inches long, and there was no trace of a uterus. He made a good recovery from the operation. In September a painful lump formed in the right groin, somewhat similar to that which had appeared on the left, and in October, 1894, Mr. Martin cut down on it and removed what proved to be the right testis. He made an excellent recovery. It is interesting to note that after the first testis was removed hair began to grow on the pubes, and he developed symptoms of hysteria; and after the second was taken away, the breasts became swollen and tender and more fully developed. At the same time he complained of "heats and flushes," which recalled those of the menopause. Mr. Martin showed the two testes and microscopic sections kindly made for him by Prof. Allen.

Anchylosis of Jaw.—Dr. E. N. Nason showed a man, aged 39, who had received an injury to the jaw on the right side some twelve years ago. Two years and a half later, freedom of movement of lower jaw became impaired, and some two years later still the teeth could not be separated at all. He remained in this condition for nearly seven years, living on slops as no mastication was possible. An incision was made along the posterior border of the ascending ramus of lower jaw on right side from half an inch below the zygoma to the angle. The bone was freely exposed, cleared, and a wedge (with base posteriorly) removed from the ascending ramus just above the angle. The bone was extremely dense and the division, which was effected by fine saw and cutting bone forceps, was difficult. There was no hæmorrhage from the inferior dental artery, movement was commenced on the third day, and gave very little pain. The patient now, after a year's interval, has excellent masticatory powers.

Avulsion of Finger.—Dr. E. N. Nason showed a finger that

had been wrenched off. The finger separated at the middle of the first phalanx and left a most shapely oval flap which covered the stump very nicely. Attached to the avulsed finger were all its tendons and muscles. The extensor communis tendon with small portion of muscle attached to it measured 12 in. There was little hæmorrhage, and the wound healed by first intention.

Case of Mixed Cerebral and Posterior Spinal Sclerosis.—Dr. Kauffmann showed a man aged 58, who, when first seen, presented the clinical picture of early general paralysis of the insane, with loss of memory and general stupidity; and a pain across the lower part of the back, extending into the flanks. The left pupil was larger than the right, but the fundi perfectly normal, and the pupils reacted both to light and to accommodation. Within the space of eight weeks he developed an ataxic gait, Romberg's symptom, loss of knee-jerks and increasing weakness of sight, together with the appearance of early atrophy of both optic nerves and the Argyll-Robertson pupil, and presented therefore unequivocal signs of posterior sclerosis of the spinal cord. Points of special interest are the rapidity of the onset of the tabetic symptoms and their sequence upon the mental disturbances.

Chronic Peritonitis.—Dr. Russell showed a case diagnosed as chronic peritonitis of syphilitic origin. The patient, a man, aged 34, was admitted in Aug., 1892, with extreme ascites. There was a history of alcoholism, and the case was thought to be one of cirrhosis of the liver, although no alteration in the size of the liver could be detected. The ascites persisted, needing repeated tapplings, until the following January, when a nodule was felt underneath the abdominal wall. Large doses of iodide of potassium were administered, with the result that the nodule gradually disappeared, and the ascites from that time slowly cleared up. The patient was discharged the following June, and shortly afterwards, whilst attending as an out-patient, developed well-marked tertiary syphilitic lesions. Enlargement of the liver can, however, now be made out.

Sarcoma of Testis.—Mr. F. Marsh showed this specimen,

excised, on November 7th, from an Italian æt. 38. For six months the left testis had been slowly and uniformly increasing in size without any known cause. There was no history of syphilis, recent gonorrhœa, or injury. The last few weeks a fair amount of pain had been felt. There was no thickening of the cord, nor could any enlargement of glands be detected. A hydrocele of the cord, high up, had been tapped some time previous to the swelling of the testis. On section, no distinct growth was seen, the testis being uniformly infiltrated by it. A microscopical examination had been made by Dr. Kauffmann, who reported the growth to be a large round-celled sarcoma spreading between the tubules of the testis.

Notes of a Case of Tetanus.—Mr. F. Marsh related the salient points of this case. The patient, a man æt. 45, was admitted into the Queen's Hospital, on October 17th, with a compound dislocation of the left hand outwards, caused by a fall of soil on to the arm. Symptoms of tetanus commenced at 10 a.m. on October 23rd, and as the wound was suppurating and unhealthy, amputation through upper third of the forearm was performed at 4-30 p.m. the same day. The man was isolated in a darkened room, kept absolutely quiet, fed chiefly per rectum, and given frequent doses of chloral hydrate. Some tetanus antitoxin was sent for, but death occurred quite suddenly at 4 p.m. on Oct. 25th from a tetanic spasm of the heart. The amputation wound was healing by primary union. Mr. Leedham-Green had made a cultivation from a portion of tissue taken from the wrist joint immediately after amputation, and demonstrated the presence of the characteristic drumstick tetanus bacillus.

Large Intestine from a case of Dysentery.—Dr. Foxwell showed the large intestine of a well-nourished woman of 32, who had died at the Queen's Hospital under his care with the symptoms of acute dysentery. The health of the patient had been usually good, though all her life attacks of diarrhœa of moderate intensity were easily induced, so that she had to be very careful as to the nature of her food. Eight weeks prior to her death she was seized with a more severe attack than usual, which continued for fourteen days. She then ate some veal for dinner,

and the same evening was seized with acute generalised abdominal pain. The next day she kept her bed, vomited several times: the vomit containing some blood. The stools became very watery and dark, contained much blood, and were 15 to 20 in the twenty-four hours. In a day or two they became reduced to 6 or 7 a day, and the vomiting and passage of blood ceased. Her state remained much the same with frequent pain and increasing weakness and emaciation till her admission ten days before her death. Her abdomen was then generally tender, with especial tenderness in the right iliac region, but otherwise nothing abnormal was detected in it. The tongue was large, flabby, glazed, and unduly red. Pulse 120, small, soft, and irregular. Face, worn and drawn. The stools were always small, and consisted of flakes of green mucus, fragments of undigested milk, a few small clots of blood, and, occasionally, an ounce or an ounce and a half of unmixed blood. De emittens ipecacuanha, opium, and bismuth had no effect on the diarrhoea: it was thought that the ipecacuanha made her vomit. She sank rather quickly at the close, dying from exhaustion. At the *post mortem*, the heart, lungs, and the whole of the small intestine were quite healthy. The liver, kidneys, and spleen were soft and slightly pale. From the cæcum to two inches from the anus, the large gut was thickly set with clean-edged ulcers, $\frac{1}{4}$ to $\frac{1}{3}$ of an inch in diameter, most of them shallow and all with an acute appearance. The gut was adherent to the left kidney; everywhere it was very soft, and tore repeatedly on being removed. It was generally thickened, and in one or two places somewhat stenosed, but nowhere did this seem to be due to the chronic deposit of fibrous tissue. Though Dr. Foxwell had never previously come across a case of acute dysentery in Birmingham, yet he could give the condition no other name. In all cases of simple ulcerative colitis seen by him *post mortem* the ulcers had been much deeper and larger with densely infiltrated edges and moreover, of greatly varying age; there were evidences also of fibrous deposit. The freedom from congestion of Peyer's patches negatived typhoid.

Glaucoma.—Dr. Sinclair showed for Mr. Eales a man, æt. 47, with absolute glaucoma in one eye, the result of chronic glaucoma of at least six years' standing. The remarkable point about the case being the presence of two large cystic detachments of the uveal pigment layer of the iris. The other eye is normal.

MIDLAND MEDICAL SOCIETY.

The second ordinary meeting of this Society was held on Wednesday evening, November 21st, the President, Mr. T. F. CHAVASSE, in the chair.

Mr. E. Luke Freer showed a case of contraction of fingers with anæsthesia. The patient, a young farmer aged 18, living in Cornwall, fell from a cart six months ago and sustained a fracture of both bones of the forearm, not compound, but the lower fragments were flexed completely upon the upper arm. It was set at once and a bandage applied rather tightly under the splints. He suffered such agony that in the middle of the night he had to go to the doctor and have it loosened; no pain afterwards. The anterior splint reached to the tips of the fingers. When taken off, eight weeks afterwards, the fingers immediately became tightly flexed at the first inter-phalangeal joints. Was treated at a hospital by anterior wooden splint with slots, through which the fingers were bandaged to it. In forty-eight hours large sloughs formed over all the joints, and the splint was abandoned. It was found then that there was no feeling beyond the seat of fracture. The limb was then rubbed with liniment for three or four weeks, but no improvement of contractions. The anæsthesia gradually improved, however, and when he came under Mr. Freer's care, on June 5th, he had sensation down to the metacarpo-phalangeal joints, none beyond, and the sloughs over the joints still remained. There was considerable callus thickening over the seat of fracture, the phalanges and wrist rigidly flexed, but fingers extended on the hand (shewn in photograph). Massage, passive manipulations, and Faradisation were used for three months; ulcers

healed, anæsthesia slightly improved in one or two fingers, no improvement of contractures, callus thickening much less. On September 15th the arm was rendered bloodless by Esmarch bandage, anæsthetic given and an incision made over front of forearm in lower third 4 inches in length, palmaris longus, flexor carpi radialis, and the tendons of the flexor sublimis and profundus divided, the divided ends lightly attached with catgut ligatures (leaving about an inch and a half separation), the wound closed with wire sutures; iodoform dressing and drainage tube. All the fingers now were fully extended, but they were put up on shaped iron back splint in the original flexed condition. On September 30th the wound was healed; light manipulations and massage re-commenced, with Faradaic current; splint re-applied, with elastic finger-stalls for gentle extension. As now seen, the patient's fingers are fully extended, flexion of wrist almost normal, also extension of metacarpophalangeal joints less pronounced, anæsthesia less in fingers, but no voluntary power to flex or extend at present beyond wrist; feeling in thumb almost perfect.

Mr. Freer mentioned that the points of special interest were the cause of the anæsthesia, the condition of the nerve trunks, and the prognosis of any attempt at nerve suture which he felt was doubtful, as the nerves were most probably mixed up with the effused callus.

Gouty Concretions.—Dr. Short showed a case of large gouty concretions in the hands of a woman, æt. 50. The swelling of the first metacarpophalangeal joint measured $6\frac{1}{2}$ inches in circumference. The first attack of gout had occurred eight years before at the end of twelve months' privation.

Pneumo-thorax.—Dr. Short showed a case of pneumo-thorax of the left side in a man, æt. 49., occurring suddenly during the first week of October of this year. In this case the diaphragm had never been much depressed, and the spleen could not be felt below the margin of the ribs. The patient said that for eleven years he was short of breath on exertion and had had a cough, so that it seemed probable the left lung might have been

partially disabled and the diaphragm fixed by adhesions. A cyrtometric tracing showed that the affected side was rather less than the sound side. All the other signs of pneumo-thorax were very well marked. The right lung showed no signs of tubercular deposit, and in spite of the complete absence of vesicular breath sounds over the left side the patient could walk about fairly well, and only experienced dyspnœa on exertion.

Kidney removed by Nephrectomy.—Mr. Chavasse showed a left kidney removed by laparotomy from a boy aged seven. The patient on various occasions had had seven calculi removed from his bladder by median, lateral, and suprapubic lithotomy. In August last, he was admitted into the General Hospital owing to pains in the left side. Aspiration yielding pus, an incision was made in the 9th intercostal space and a drainage tube inserted. In a few days the discharge from the wound was shown to be urine. The fistula showing no signs of closing nephrectomy was performed successfully on November 9th. The organ was dilated, cystic, and showed numerous small interstitial abscesses in the existing cortical substance. It contained no calculus.

Umbilical Fæcal Fistula due to patency of Meckel's Diverticulum.—Mr. George Heaton showed the intestines, umbilicus and bladder of an infant with a congenital fæcal fistula. Fæces were first discharged from the umbilicus two days after birth, and from that time till the patient's death when three weeks old, all the child's motions were passed through the abnormal aperture.

The specimen showed an opening at the umbilicus lined by mucous membrane and leading by a short wide canal into the small intestine some 6 or 8 inches from the ileo-cæcal valve. The small intestine above the aperture was much dilated. The large intestine was very much contracted. The cæcum and vermiform appendix lay deeply in the true pelvis attached to the sacrum by a long meso-cæcum, and the ascending colon passed upwards to the left side of the spinal column.

Mr. Heaton regarded it as a patent Meckel's diverticulum

which had probably passed through the umbilicus into a dilated umbilical cord, and been ligatured inadvertently by the midwife in attendance.

Dr. Thomas Wilson shewed an ovarian cyst in which axial rotation had given rise to twisting of the pedicle and hæmorrhage into the walls and loculi of the cyst. The walls in the lower part near the pedicle were from one to one and a half inches in thickness; elsewhere a line of hæmorrhage was seen inside the fibrous capsule of the cyst.

Dr. Thomas Wilson read a paper on Axial Rotation of Ovarian Cysts causing twisting of the pedicle. These cases were divided into three groups; the first comprising cases in which no serious pathological or clinical consequences ensue; the second included cases of acute strangulation of cysts due to twisting of their pedicles; and the third those of chronic strangulation and its results. The symptoms, signs, diagnosis, treatment and pathology of each group were described. The causation was then discussed, and referred to purely mechanical factors, the chief being (1) the specific gravity of the tumour, (2) the position of attachment of the pedicle at or near the lowest part of the tumour, and (3) the varying position and conditions of the lowest part of the containing cavity, especially depending on posture, and on variations in the hollow viscera which have a more or less fixed base to act from—viz., the bladder, uterus, cæcum, sigmoid flexure, and rectum. The small intestine transmits abdominal pressure to the surface of the tumour, and helps indirectly to fix it in the lowest part of the cavity available at any moment; but movements of this viscus do not appear to be likely to have any direct influence in producing axial rotation.

REVIEWS.

INEBRIETY OR NARCOMANIA.*

IN this ponderous volume of nearly one thousand pages Dr. Kerr endeavours with very indifferent success to prove that inebriety is a disease. That it is so in some cases is extremely probable ; but that all inebriates are the victims of a disorder akin to insanity, as Dr. Kerr would have us believe, is certainly not true ; and, beyond the probability to which we have just referred, Dr. Kerr's book proves nothing—for the continual reiteration of a statement clothed in different words constitutes no proof that the statement is true. It seems clear that if excessive indulgence in alcohol is to be excused on account of its being a symptom of disease, it is impossible to deny a similar protecting cloak to each and every form of indulgence. With regard to tea, coffee, and tobacco, the author gets out of the difficulty by stating that by inebriety or narcomania he means "that disease which is characterised by an overpowering impulse to intoxication at all risks." (p. 150.) As the force of this sentence turns upon the meaning of the term intoxication, we will give the author's definition of the word :—"I define intoxication as that state in which any person who is affected by an intoxicant, says or does anything which he would not have said or done had he not been under the intoxicating influence." (p. 712.) There is a looseness about any statement based on such a question-begging definition that its value is proportionately diminished as an argument. We quite admit that to decide where disease begins and crime ends is a difficult matter, but we doubt the advisability of pushing the disease theory so far as to excuse the inhuman cruelty of the following case, over the sequel of which Dr. Kerr seems to gloat with keen satisfaction, for he quotes it twice. "The wife of an army sergeant was accused of culpable homicide in that she neglected to supply necessary food and

* Inebriety or Narcomania, its Etiology, Pathology, Treatment and Jurisprudence. By Norman Kerr, M.D., F.L.S. Third Edition. London: H. K. Lewis. 1894.

care to her infant boy, through which he died. The evidence showed that the child was in a filthy state, neglected, and ravenously hungry, was in consequence taken from her and was afterwards returned to her. The infant, which was described by the medical attendant as small but healthy at birth, died at the age of six weeks. The medical evidence was to the effect that death ensued from debility and ulceration of the bowels through starvation and neglect. The mother was drunk every day and had an attack of delirium tremens." (p. 649.) The alcoholic view was successful and the verdict was "Not guilty," and the woman was discharged! If this is the kind of legislation that Dr. Kerr is trying to bring about, we fail to see how the public will benefit by its adoption. The weakness of the author's argument is well seen in the following case quoted as an instance of how a wife may worry a husband into inebriety. "Such an unfortunate was Major S., a gallant officer, who commanded the respect and kindness of everyone with whom he came in contact, except the one who ought to have exhibited the most unequivocal marks of both. At 42, he married a lady of some 26 summers, who always looked as if it were the place of the whole world to be continually at her feet, ready to fly and anticipate all her whims. The martyr bore his punishment for some five years in silence, but during the latter half of that time he gradually resorted to the bottle to sooth his suffering. He became a wretched degraded sot" (p. 218.) It is quite clear that in this case the martyr did not commence to drink on account of the pleasure of intoxication as such, but for the peace of mind it at first brought him. Suppose then he had drugged his wife, say with opium, and obtained the peace and quiet in that way, until by gradually increasing the dose he killed her. In each event the original motive of freeing himself from worry remains the same, and whatever the result may be such procedure must not be counted as mental disease in one case, and as crime in the other.

The greater part of the section dealing with the pathology of inebriety is wordy and extremely vague. Dr. Kerr thinks that

it is only those who are possessed of a particular diathesis who respond to the excitation of inebriety. "In what consists this diathesis," he asks, "so potent in its operation, so subtle in its working, which has betrayed to their death so great a company of our fellow-beings? It consists," he answers, "in a deficient tonicity of the cerebral and central nervous system with an accompanying defective inhibition." Of course, after that, the reader knows all about it.

Although the author's arguments, or his methods of handling them, do not convince the reader, the portions of the book dealing more directly with facts will strike him at once as being really good even if somewhat verbose. The descriptions of the various forms of inebriety are full and accurate; and inasmuch as narcomania from even the rarest or out-of-the-way substance is included in this section, it will be valuable as a means of reference. The medico-legal chapters are also interesting, and we can recommend them for thoughtful perusal to everyone whose professional duties bring him in contact with drunkards of any degree. In discussing the "Drunk or Dying" question, Dr. Kerr says: "I have noted two definite discriminating symptoms, temperature and contraction of pupil. The temperature is usually sub-normal in drunkenness, while either normal or super-normal in apoplexy or shock. In intoxication both pupils are contracted; in its absence only one is affected." (p. 710.) Now although these symptoms would probably render assistance in some cases, we do not think that any medical man of experience would consider either of them as definite and discriminating.

Taking it altogether, the book is a great deal too long. Case after case is quoted in the earlier chapters until the reader's attention is quite tired out, and many of the comments are simply repetitions of what has gone before. Condensed into about half the present size, Dr. Kerr's book would be a useful and readable volume.

HERNIA.*

THIS book, of some 200 pages, has many points which deserve to be commended. For the greater part it deals with the palliative and radical treatment of hernia, and we have much praise to bestow upon that portion. The latter part dealing with strangulation is not so well done, and is at times even dangerous. On the whole it does not in any way approach the excellent treatise by Macready. Dr. Manley strongly urges that a child under one year with a small painless hernia and no other complications should not wear a truss, stating that strangulation is rare and almost unknown in infants and young children; a remark which our experience certainly does not justify. It is only too true that a truss on a diapered infant is a great nuisance. He advises that ruptured infants should not be allowed to walk too early, but encouraged to creep, as by doing so the pressure of the abdominal contents is more evenly distributed. The statement that "all herniæ in infancy and early childhood with few exceptions may be cured, in which a properly selected truss is worn," cannot be allowed to pass unchallenged. Herniæ do appear to be cured for a time, but how often they recur sooner or later.

The history of the various operations for radical cure is interesting and complete. We are pleased also that the author does not advise radical cure to be performed on every patient with a hernia, unless there is some particular reason for the operation; remarking, too, on the frequency of recurrence after operation. Speaking of "the essential principles on which all operations for radical cure or surgical treatment of reducible non-strangulated hernia are performed," he says, perfectly correctly, that "the fundamental vital phenomenon indispensable to success, in the majority of hernial infirmities in adults, is local adhesive inflammation, cell proliferation, ultimately under-

*Hernia: its Palliative and Radical Treatment in Adults, Children and Infants. By J. Lomas H. Manley, A.M., M.D., Visiting Surgeon to Harlem Hospital, Consulting Surgeon to Fordham Hospital, etc. London: F. J. Rebman. 11, Adam Street, Strand.

going condensation and fibrous sclerosis." Then he goes on to say that "this phase of inflammatory hyperplasia is an active factor in the 'etiology' of hernia, but now it must be excited artificially by the surgeon in all direct operations for the relief or cure of it. In this particular, 'lime' (? time) has brought no change in the therapy of hernia." That inflammatory hyperplasia is an active factor in the ætiology of hernia is surely either a misprint or grossly incorrect. For ligatures and sutures Dr. Manley advises the use of silk, stating that the use of catgut for securing the large vessels of the omentum is needlessly to imperil our patient's life.

Another point which deserves notice is the reference to the use of cocaine in herniotomy. The author has quite given up the use of pulmonary anæsthetics when operating upon strangulated hernia. He states that twenty or thirty drops of a 1 per cent. solution of cocaine injected hypodermically in three or four places is sufficient to produce complete anæsthesia in the region to be operated upon. He never employs less than sixty drops or more than a hundred. The analgesia will last about thirty minutes. A good description of the various operations for radical cure is given, and notably of that performed by Bassini.

The last part of the book is devoted to the consideration of Hernia when strangulated. This is the part to which we take exception. We consider the giving of sufficient morphine to secure relief from pain and relaxation of spasm to be most dangerous advice. Deaths from strangulated hernia should be only about 1·5 per cent. if the cases are operated upon early. Surgeons in hospitals are only too frequently called upon to operate when the intestine is gangrenous. The giving of morphine, the leaving a strangulated hernia in men from 24 to 48 hours, and in women 12 hours, the repeated attempts at taxis, as recommended by the author, are to our minds of the utmost danger and cannot be condemned in too strong language. We do not think that in inguinal hernia an incision six inches in length is necessary, nor in many cases need the external and

internal oblique muscles be divided. The author advises not one nick of the constriction with a hernia knife, but several small nicks with scissors, urging that by so doing there is less danger of division of the deep epigastric artery or any other abnormal artery. Not much fault can be found with the treatment advised for gangrenous hernia.

POST NASAL GROWTHS.*

A LITTLE book of 96 pages, which is an amplification of a previous paper published in the St. Bartholomew's Hospital Reports for 1894, showing that in cases of post nasal growths respiration is nasal and not buccal during sleep.

Errors of diction occur occasionally, as on page 42—"A child will spring up rapidly;" but there is one error which one can hardly forgive—viz., on page 56—"After hours of obstructed breathing the blood becomes charged with *products of combustion in an unoxidised condition*, etc." As the breathing is chiefly concerned with the interchange of gases, and as oxygen going to the blood combines with its carbon and hydrogen to form CO_2 and H_2O , so it must be a chemical impossibility for the products of combustion to be in an unoxidised condition. If they are supposed to be in an unoxidised condition, then can no oxygen have had access to them, for if it had, then surely would an oxidised condition occur. If the author were speaking of the combustion of a candle, we could understand one of the products of combustion being in an unoxidised condition—viz., carbon; but as the process of respiration has for its *raison d'être* the oxygenation of the blood, we cannot understand why the products of combustion should be in an unoxidised condition.

Page 39 and the following remarks want revision, being based on the same theory.

In the paragraph on the supposed causes of otitis no mention

* Post Nasal Growths. By Charles A. Parker, Assistant Surgeon to the Hospital for Diseases of the Throat, Golden Square, London. London: H. K. Lewis.

is made of lateral growths as such. These growths are one of the causes of otitis, which usually begins with an otalgia lasting from one to four days at a time. There can be no doubt about these lateral growths, for they have been verified time after time by digital examination.

On pages 24 and 57 post nasal growths are mentioned as a symptom, which we presume is a printer's error.

In Chapter 4 the question of diagnosis is given, and Bosworth's method of spraying atomised oils is mentioned as a helpful method. But why take so much trouble when, by the aid of a mirror, the breathing from the two nostrils can be compared, and the quantity and strength of the two currents noted.

In spite of some defects, the book is well worth reading, as it contains much information which should prove valuable to general practitioners and students.

THE SENILE HEART.*

DR. G. W. BALFOUR is well known in England as the author of a volume of clinical lectures on diseases of the heart, which ran through several editions and contributed more than any other book to the diffusion of an accurate acquaintance with the modern pathology and diagnosis of cardiac diseases. A score of years must have elapsed since the publication of the book to which we refer, so that we may congratulate our author on his reappearance after so long an interval.

The present volume deals with a somewhat complex subject under the title of the senile heart. Old men have all sorts of hearts, good and bad, strong and weak, fatty, fibroid, atrophic, and hypertrophic; they are subject to various functional derangements of vigour and rhythm, and to alterations of organic perception generally painful or disagreeable. All these changes

* The Senile Heart: its Symptoms, Sequelæ, and Treatment. By George William Balfour, M.D. (St. And.), LL.D. (Edin.) London: Adam and Charles Black. 1894.

have been included in Dr. Balfour's subject; our readers will not therefore be surprised if we say that the book is somewhat diffuse and that its chief merit lies in the records of the author's clinical experience and the practical suggestions which he deduces from them.

The relation of the senile heart to gout, to high living, and want of exercise is clearly pointed out, and the hints on the management of these cases, on their diet and regimen, and on the use of appropriate drugs are extremely valuable. We have also chapters on fatty degeneration, angina pectoris, tachycardia and bradycardia, tremor cordis, etc., and in connection with each of these the same useful features of clear exposition and practical advice are manifested. While we disclaim any intention to endorse all the pathological doctrines which it has pleased Dr. Balfour to propound, we have much pleasure in welcoming this fresh product of his classical pen, and warmly commend it to our readers as the outcome of a wide and liberal culture, long experience, and acute observation.

THE THEORY AND PRACTICE OF MEDICINE.*

IN the ninth edition this widely read text-book has been carefully revised and in several places re-written, whilst some valuable additions have been made.

In the preface, Dr. Roberts calls attention to the especial consideration which has been devoted to the subject of Bacteriology; and under the heading of each disease to which a special micro-organism has been assigned as the exciting cause, a short but clear and adequate account of this most important branch of medicine will now be found.

Short sections dealing with the general therapeutics of the various systems of the body have also been added, and will, we think, be of material service in aiding the comprehension of

* The Theory and Practice of Medicine. By Frederick T. Roberts, M.D., B.Sc., F.R.C.P., Professor of Materia Medica and Therapeutics, and of Clinical Medicine, at University College; Physician to University College Hospital, etc. Ninth edition. London: H. K. Lewis. 1894.

those principles upon which treatment should essentially be based, but which are apt to be missed by the student, and sometimes even by the practitioner of medicine.

The book has certainly gained by these improvements, and will continue to hold its acknowledged position as one of the best text-books of medicine for those preparing for the higher examinations.

ON PRESERVATION OF HEALTH IN INDIA.*

THIS little book is a reprint of a lecture delivered some years ago to the students of Cooper's Hill College, who were preparing for the service of the Indian Department of Public Works. It contains a great deal of sensible advice, such as Sir J. Fayrer's long experience enables him to tender with authority, and we know of nothing better to place in the hands of anyone who is going out for the first time to reside in any part of our Indian or tropical possessions. Perhaps a little more intense conviction of the dangers of water and milk as vehicles for the conveyance of infective diseases would have made the author more usefully emphatic on the desirability of sterilising them; but it is something to find an Indian Government official even admitting the possibility of water-borne cholera.

ESSENTIALS OF THE DISEASES OF THE EAR.†

THIS is number twenty-four of 'Saunders' Question-Compends, and is published with the idea of giving a smattering of knowledge of ear diseases in the shortest possible time. Whether these publications written in question-and-answer form impart real knowledge is a doubtful point; but there is no denying that they are extremely useful occasionally for examination

* On Preservation of Health in India. By Sir J. Fayrer, K.C.S.I., M.D., F.R.S. London: Macmillan and Co. 1894.

† Essentials of the Diseases of the Ear. By E. B. Gleason, S.B., M.B. Philadelphia: W. B. Saunders. 1894.

purposes. The responsibility of their production rests not with the authors, nor with the publishers, but with existing examining bodies.

Dr. Gleason's contribution is full, clear, and accurate. The illustrations are numerous, and including as they do some very useful diagrams will appeal especially to the student.

A HEALTHY HOME.*

THIS is a useful little book and will prove of service to anyone interested in the construction and sanitary arrangements of a house and the best methods of keeping it healthy and clean. A considerable amount of ground is covered, and we think it would have been better economised had less been attempted in the available space. Although intended for readers devoid of technical knowledge, portions of the book are quite beyond the clear comprehension of most people who have not that knowledge. For instance, the paragraphs on the softening of hard water and the methods of ventilating rooms by means of valves and tubes would not convey much real information to readers unacquainted with the subject. The chief difficulty met with in preparing a popular book on a technical subject lies in the fact that the writer is almost compelled to pre-suppose on the part of the reader some slight elementary knowledge, and in many cases even this is absent. On the whole the author has succeeded very well and has produced a book of practical value at a cheap price.

New Books, etc., Received.

Index Catalogue of the Library of the Surgeon-General's Office, United States Army. Vol. XV. Washington: Government Printing Office. 1894.

The Dynamics of Life. By W. R. GOWERS, M.D., F.R.S. An Address delivered before the Medical Society of Manchester. London: J. and A. Churchill. 1894.

* A Healthy Home. By Francis Vacher. London: Office of the Sanitary Record.

- Helps in Sickness and to Health By HENRY C. BURDETT. Author of "Hospitals and Asylums of the World." London: The Scientific Press Limited. 1894.
- Urinary Surgery. By E. HURRY FENWICK, F.R.C.S., Surgeon to the London Hospital, Surgeon and Pathologist to St. Peter's Hospital for Stone, etc. Illustrated. Bristol: John Wright and Co. 1894.
- Diagnosis, Differential Diagnosis and Treatment of Diseases of the Eye. By A. S. ADAMS, M.D., Instructor in Diseases of the Eye in the Post-Graduate Medical College; Assistant Surgeon to the Manhattan Eye and Ear Hospital. London and New York: G. P. Putnam's Sons. 1894.
- Atlas of the Anatomy of the Nasal Cavity and its Accessory Sinuses. By DR. A. ONODI. Lecturer on Rhino-Laryngology in the University of Buda-Pest. Translated from the 2nd edition by W. Clive Thomson, M.D., F.R.C.S., M.R.C.P. London: H. K. Lewis. 1895.
- The Aseptic Treatment of Wounds. By DR. C. SCHIMMELBUSCH. Privat-Docent in Prof. v. Bergmann's University Clinic at Berlin. Translated from the 2nd German edition by Alfred Theodore Rake, M.B., B.S., F.R.C.S., Registrar and Pathologist to the East London Hospital for Children. London: H. K. Lewis. 1894.
- Pulse-Gauging. By GEORGE OLIVER, M.D., F.R.C.P. London: H. K. Lewis. 1895.
- The Sympathetic Nerve drawn from a Dissection prepared by BYRON ROBINSON. Chicago. 1894.
- An Introductory Lecture on the Public, the Profession and Medical Charities, delivered at the Middlesex Hospital Medical School at the opening of the Winter Session, Oct. 1, 1894. By ROBERT BOXALL, M.D., M.R.C.P., Assistant Obstetric Physician to the Hospital, and Lecturer on Practical Midwifery at the Middlesex Hospital School. London: H. K. Lewis. 1894.
- The Prevention of Smallpox, with special reference to the Origin and Development of the Stamping-out System. By EDGAR M. CROOKSHANK, M.B., J.P., Professor of Comparative Pathology and Bacteriology at King's College, etc. London: H. K. Lewis. 1894.
- Diseases and Deformities of the Spine. By RT. SWAN, Surgeon to the Orthopædic Hospital. Dublin: Fannin and Co. 1894.

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FEBRUARY, 1895.

ORIGINAL COMMUNICATIONS.

THE MIDDLEMORE LECTURE.*

ON OCULAR AFFECTIONS CAUSED BY BLOWS.

BY HENRY EALES, M.R.C.S.

SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

Gentlemen,

As I understand the object of the Founder of these lectures, it was that they might be the means of periodically bringing before the Profession such matters in connection with the practice of Ophthalmology as might be presumed to be useful to those engaged in general practice, rather than that they should be a medium for dealing with abstruse, scientific, or disputatious questions of ophthalmology. I feel, therefore, that no apology is required of me for having taken an entirely practical subject for my lecture, such as the Results of Blows: for it seems to me that of all the disorders to which the eye is liable these are the most likely in the first place to come under the care of the practitioner, while upon a due estimate of the injury in the early stage and its proper treatment may depend very greatly the ultimate result to the organ of vision.

I have restricted myself to the results of blows—First, in order not to try and cover too much ground; and Secondly,

* Delivered at the Birmingham and Midland Eye Hospital, Dec. 13. 1894.

because I imagine that injuries from wounds to the eyeball are by most considered to be cases that almost invariably call for special advice and assistance, the practitioner hardly caring to undertake the responsibility of cases which for the most part call for some surgical interference, and which are attended with grave danger to the injured eye, and, moreover, involve the terrible risk of loss of the companion eye from that truly awful and uncontrollable disease, sympathetic ophthalmia.

I have felt the more inclined to deal with this subject because previous Lecturers have not touched on this ground, and because at this Hospital we have, I might say, I think, unsurpassed experience in this domain of ophthalmic surgery.

I propose to deal—*First*, with the result of blows on structures outside the eye, but appertaining to it.

Secondly, on the results to the eyeball itself.

ECCHYMOSIS.

In consequence of the great laxity of the subcutaneous areolar tissue of the eyelids, and of the submucous connective tissue of the conjunctiva, and their very high degree of vascularity, no part of the body is perhaps more liable to ecchymosis after blows than the skin of the eyelids and the conjunctiva; hence the extremely common occurrence of a "black eye," with which, however, it is not necessary that I should deal at any length, the diagnosis is obvious, the prognosis good, and the treatment simple. Ecchymosis of the lids is usually pretty sharply limited to a line corresponding to the margin of the orbit, because the skin is attached to this by rigid connective tissue which prevents the further advance of the blood; it is not uncommon, however, for the blood to travel beneath the skin over the dorsum of the nose to the other side; and hence the common occurrence of ecchymosis affecting both eyes, and giving the impression of both having been injured by the blow. The skin over the nose being thick prevents the ecchymosis over it being seen, and so the connecting link of the ecchymosis on the two sides is not observed.

So too ecchymosis of the conjunctiva is sharply limited at the

corneal limbus; because the conjunctiva over the cornea is closely applied to its anterior limiting membrane, without the intervention of any loose submucous connective tissue in which blood could be effused; occasionally, however, there is a very slight transudation of the effused blood elements between the lamellæ of the cornea near the limbus, in consequence of which the iris as seen through this stained area appears muddy, or if the patient is blue-eyed, a peculiar green colour is given to the iris seen through such an effusion.

Proptosis may be caused by effusion of blood also into the cellular tissue of the orbit, and is usually indicative of fracture of its walls.

Ecchymosis of the conjunctiva, which only appears from three to five days after a blow, and then probably just opposite the inner, or more often the outer, commissure, is diagnostic of fracture of the walls of the orbit far back, it may be of the base of the skull, and is therefore a symptom of some gravity, and should always be duly noticed. Its late appearance is due to time being required for it to travel forwards from the site of the original effusion.

In all cases of "black eye" from blows I would emphasise the extreme importance of assuring oneself at the outset that no more serious injury has resulted, and would specially insist that however swollen the lids may be the practitioner should not omit to see and examine the eye itself, even if it should be necessary to administer an anæsthetic for this purpose, otherwise he will run the risk of overlooking some grave injury to the eyeball. Fortunately, the use of cocain, 2 or 4 per cent. as a local anæsthetic, renders a general anæsthetic seldom necessary.

It cannot add to the comfort, or reputation of the practitioner, after treating a case as one of simple "black eye," to find a week later on subsidence of the swelling, that there is a rupture of the eyeball, while the delay in dealing properly with such an injury greatly lessens the chances of such an eye making the best recovery, yet it is by no means unknown to me for such an unfortunate experience to befall the unwary practitioner.

TREATMENT.

In the first place, while there is danger of further hæmorrhage into the tissues, a cold water compress is all that is required—the water being iced in summer. If desirable, and to appease the anxiety of the patient, a simple lotion may be employed for the purpose such as acid boracic ζ iss ad ζ viii., and if there is smarting cocain hydrochlor. gr. i. ad ζ i. may be added to this with advantage; or if necessary a solution of cocain gr. i. ad ζ i. may be dropped into the eye every four hours: this will not only give relief by causing partial anæsthesia of the conjunctiva, but by its powerful effect in lessening hyperæmia of this membrane will make further hæmorrhage under it less likely to occur. It should be borne in mind that such a solution of cocain will dilate the pupil, of which it is wise to inform the patient, to prevent its causing anxiety to him or his friends; but as the ciliary muscle is scarcely affected by cocain, there will be no interference with vision from loss of power of accommodation. After the first two days, when danger from further hæmorrhage is passed, I think warm fomentations are not only grateful to the patient, especially if there is much swelling of the lids, but that they promote the reabsorption of the effused blood.

Ten days to three weeks is about the average time required for all traces of ecchymosis to disappear, though I have known so long a time as seven weeks elapse before this is accomplished.

EMPHYSEMA OF LIDS.

After blows near the eye, specially if accompanied by epistaxis, it is wise to warn the patient against blowing the nose for some days, otherwise it may happen that emphysema of the lids and even of the orbital cellular tissue may take place, causing great alarm to the patient by producing sudden proptosis of the eyeball and great swelling of the lids.

The history of such an occurrence, during the blowing of the nose, or in coughing or sneezing, is sufficient of itself to make a diagnosis, though the condition is readily recognised by the obvious appearance of air vesicles in the lax subcutaneous and

submucous tissue, or failing that, by the peculiar crepitation felt on pinching the skin up when also the air vesicles usually approach the surface over the area pinched, even if they have before failed to disclose themselves.

PROGNOSIS AND TREATMENT.

This condition usually subsides in 24 to 48 hours if the patient refrain from further blowing the nose, and causes no bad consequences.

Its chief significance is that it is an absolute sign of fracture of the bones somewhere, causing a communication with the nose, or its accessory cavities the antrum or frontal sinus, and bearing in mind the septic character of the nose, it is remarkable that it is almost never followed by abscess in the tissues; though it is possible that some abscesses following blows may be explained by such a communication with these cavities, though not obviously attended by emphysema.

OTHER RESULTS OF FRACTURE OF BONES.

The best treatment is a pressure bandage after applying a layer of Gamgee tissue to the closed eye. The patient may have his comfort increased, and his anxiety lessened, by using warm fomentations occasionally.

In all cases of blows it is wise to examine by the finger the orbital margin to ascertain if any fracture exists, as is obvious when the border is irregular. or fracture may be diagnosed by a point which is tender to pressure, and occasionally crepitation may be felt at the site of fracture, while by manipulation the border may be somewhat restored.

I once saw a case, some months after the original injury, in which much disfigurement was caused in a young girl by displacement backwards of the whole malar bone from its attachment to the superior maxilla without the zygoma being displaced, and could not but feel that if it had been recognised at the time of injury it might have been replaced by manipulation, at any rate to a great extent, and this deformity avoided.

I have seen numbness and loss of sensation over the whole area of the infra-orbital nerve follow a blow, no doubt due to damage to the nerve, probably from fracture extending into its bony canal near the lower margin of the orbit; such a loss of sensation in the course of five or six weeks usually recovers.

I have also seen epiphora follow a blow from fracture involving the nasal duct. Should this persist after five or six weeks, attempts should be made by opening the canaliculus and passing probes to restore the lumen of the duct.

Occasionally the skin and other tissues are ruptured apparently cut by the sharp edge of the bony wall of the orbit. When this occurs it is best to suture the wound. Such wounds usually heal well.

ABSCESS OF LIDS, ETC.

It sometimes happens that the effused blood becomes the site of an abscess, probably this is more likely if a fracture into the neighbouring air cavities, or an abrasion of the skin occurs, by which septic elements gain admission to the tissues, and if on the 3rd to 5th day after a blow a boggy oedematous swelling of the lids sets in, and the skin becomes tense and shiny, this may be inferred to have taken place.

This should be opened early through the conjunctiva, or through the skin, if it points obviously externally, the incision being made parallel with the orbital margin, as such an incision running parallel with the fibres of the orbicularis gapes the least, while also it corresponds with the folds of the lids, and thus the cicatrix shows the less. If not opened early it may burrow extensively under the fascia of the lids, or into the cellular tissue of the orbit causing proptosis, and further, may cause two or more openings. If necessary, a drainage tube must be inserted. The cavity should be syringed out daily with a suitable lotion. I usually employ 1 to 5,000 hyd. perchlor. By means of Gamgee tissue and a pressure bandage, endeavours should be made to ensure the speedy closing of the cavity.

In some of these cases it will be found that the abscess cavity leads to bare bone. These are the most often found to point

in the upper lid near the external angular process, and a probe often discloses some bare bone near this process, though more usually it is the malar bone which is damaged, no doubt in consequence of its being most exposed to injury from blows, which sets up periostitis, and resulting caries and abscess, which may extend to the cellular tissue of the orbit.

These abscesses sometimes cause great disfigurement from the resulting cicatrix becoming adherent to the bone over the carious area, with or without considerable loss of the bony margin of orbit causing the lids to be puckered; those over the malar bone causing the lower lid to be drawn down and often everted (ectropion). It is very important, therefore, that they be opened as early as possible so as to limit the area over which the periosteum becomes separated from the bone by the abscess, and if necessary, a counter opening should be made, and a drainage tube passed through to ensure complete drainage of the cavity.

If ectropion results, this can only be dealt with after a lapse of a suitable time—say twelve months—by some plastic procedure.

Some two years ago a young woman came under my care with an abscess just below the inner end of the eyebrow, over the site of the frontal sinus, with a history that such an abscess occurred after a severe blow on the brow, and had several times formed and been opened by her doctor, only to recur. She suffered much from headache, and had lost the sense of smell in the nostril of the same side. On opening the abscess, the probe passed easily through carious bone into the frontal sinus, and disclosed carious bone extending back over the area of the ethmoid bone in the orbit. By making a free opening and counter-opening and inserting a drainage-tube and keeping it in several weeks, the case was ultimately cured, the abscess cavity closed, the headache disappeared, and the sense of smell returned.

In this case, evidently, the caries of the ethmoid bone had led to damage to the nerve of smell. Some few similar cases have been recorded.

Sometimes fracture leads to closure of the opening of the frontal sinus into the nose, and is soon followed by distension of the sinus and the signs of ordinary frontal abscess. This can only be suitably cured by passing a tube through the opened sinus to the nose.

I pass now to the consideration of symptoms due to injury to the structures far back in the orbit, or it may be even within the cranial cavity.

OPTIC NERVE.

Occasionally, after blows on the head, the patient finds he is immediately blind in one eye. On examination, the following symptoms are found.

1. On looking at the eyes they appear normal externally, and the pupils appear equal.

2. On covering the good eye, the pupil of the blind eye at once dilates.

3. If, while the good eye is covered, the light is alternately admitted and excluded from the blind eye, no contraction and dilatation of the pupil in the blind eye takes place as usual, but the pupil remains all the time dilated.

4. The dilated pupil of the blind eye, however, at once contracts again if the good eye is once more uncovered and light admitted to it.

It might be thought that the ophthalmoscope would at once reveal the cause of blindness, but that is not so, the fundus oculi and the optic disc appearing quite normal on ophthalmoscopic examination of the blind eye. What, then, is the explanation of these symptoms?

In order to understand them we must consider how and why it is that the pupils contract to light in health, and by what paths the impulses travel that bring this about. Let me then, for simplification, consider the effect of light falling on the retina of one eye only—say the right.

The impulse caused by light falling on the right retina is carried by the optic nerve to the brain, where it is transmitted to

the centres of both 3rd nerves, and conveyed by both of these back to each eye, there causing contraction of both pupils, the sphincters of which are supplied by this nerve.

Now let us suppose the left optic nerve cut across; in this case, the stimulus of light falling in this eye could not reach the brain, therefore would cause no contraction of the pupil of either this eye or the other; on the other hand, light thrown into the right eye will still reach the brain as explained, and travelling down by the 3rd nerves still cause the pupil in each eye to contract.

Now this is exactly the symptom we have in these cases, which can only be explained by damage to the optic nerve.

The researches of Holder and Berlin have demonstrated that in these cases there is usually a damage to the optic nerve, as it passes through the optic foramen, in consequence of a fissured fracture occurring here, where the bone being very brittle is specially liable to such injury; or a fracture of the orbital roof may extend into the optic foramen. The optic nerve may be completely crushed, or only damaged by effusion of blood into its sheath.

In these cases the blindness is usually permanent and complete; occasionally there is some partial recovery of vision only. Very rarely both optic nerves are involved, but usually only one. I have myself seen many instances in which one eye is thus blinded, but only two in which both eyes were involved, and in one of these both 6th nerves were also paralysed.

As further confirmation that this is the explanation of these cases, I would mention that about the fifth or sixth week after the injury the ophthalmoscope reveals commencing primary atrophy of the optic nerve in the blind eye; the delay of this symptom being due to the fact that time is required for the atrophic process to travel down to the eye and become visible there.

When this is seen, the prognosis is against recovery of vision in the blind eye; but if at the end of eight to ten weeks no such evidence is present, the prognosis as to recovery of some

vision is good, as probably the nerve is not permanently damaged.

I have been impressed by the fact that the blow causing such injury has often been not very severe, and unattended by loss of consciousness, or vomiting and other symptoms of serious intra-cranial injury.

No treatment is of any avail to restore vision. An injury which may be mistaken for this, both by the patient and the doctor, is homonymous hemianopsia; but as this is due to a lesion of the brain—often the occipital lobes—it scarcely comes within the province of my lecture. I will, however, briefly allude to it in passing.

HEMIANOPSIA.

In this condition, though the patient often fancies he is blind in one eye, on examination it is found that he is blind in one-half of the F.V. of each eye, no object being seen with either eye on one side—say the right—though discerned directly it has passed the middle line to the left side. This can only be due to a damage to the brain structures behind the chiasma, but may be caused by any lesion anywhere between this and the occipital lobes.

In such cases there is always evidence of severe intra-cranial mischief at the time of injury, and usually more or less prolonged loss of consciousness. It may interest you to know that in the case of the woman who jumped from the train between Tamworth and Burton a few years ago, on account of an indecent assault being made on her by an itinerant preacher, who was sent to penal servitude in consequence, this symptom was one of the few from which she did not recover as is usually the case and is accounted for by the fact that there are no commissural fibres between the occipital lobes to enable one to take the function of the other when lost. In this case unconsciousness lasted several weeks I believe, and memory was for long hopelessly at fault, so that only slowly did the facts of the assault come back to her.

PULSATING EXOPHTHALMOS.

Another, though rare, ocular condition resulting from blows on the head is pulsating exophthalmos. Immediately after the injury there is usually a thrumming noise in the head, synchronous with the pulse, with each beat of which the noise reaches its maximum intensity, and which noise is stopped or lessened by compression of the carotid artery of the same side. After a few days the eye becomes somewhat prominent and injected. This increases for four or five weeks. It will be found that, on compression, the proptosed eye can be more or less replaced, but that with each heart-beat there is distinct pulsation of the orbital contents to be seen and felt. A bruit, synchronous with the pulse, may be heard with the stethoscope over the temple or eyebrow. The temporal and angular veins will now be found distended, and in some cases a distinct thrill may be felt in them with each pulsation. The sight of the proptosed eye may be lost from glaucoma, brought about by the turgescence of the ocular veins or from sloughing of the cornea due to its exposure from proptosis. This condition is usually due to rupture of the carotid artery in the cavernous sinus, leading to a communication between this and the cavernous sinus (arterial varix), in consequence of which all the orbital veins too weak to withstand the arterial impulse become distended by the blood pumped into them by the carotid artery, and receive its pulsations.

The rupture of the artery may be caused by the blow, or, as is more usual, by some spicula of bone from fracture in this region perforating the artery. Occasionally the injury simply causes thrombosis in the sinus, with consequent distension of the orbital veins entering into it, to which the pulsations of the carotid artery are transmitted.

There is one sign, however, by which a rupture of the artery and consequent arterial varix may be certainly diagnosed, that is when there is a distinct thrill to be felt in the distended veins seen around the orbit. In some few rare cases a traumatic aneurism of the ophthalmic artery in the orbit has been found to be the cause of this condition.

. PROGNOSIS.

There is danger to life from the orbital vessels giving way, and causing fatal hæmorrhage ; though cases in which this condition has lasted twenty years or so without this catastrophe are on record.

TREATMENT.

Very rarely this condition undergoes a spontaneous cure after a time—of this I have myself recorded one example. Less rarely, but very exceptionally, it is cured by rest in bed with compression of the carotid artery, accompanied by iced compresses, and perhaps aided by the internal administration of potass. iodide. Ligature of the carotid artery is the most satisfactory and proper means of cure, and is generally successful, though cases are on record which have defied ligature of one carotid artery, followed by ligature subsequently of the second carotid. Bearing in mind the nature of the affection as an arterial varix of the cavernous sinus, and the free communication between the cavernous sinuses on the two sides, it is not surprising that occasionally a pulsating exophthalmos on one side is soon followed by a similar condition of the opposite eye.

As an illustration of how several different lesions may occur in the same patient from the same injury, I may say I have seen a pulsating exophthalmos on the left side, accompanied by complete blindness on the other side from atrophy of the optic nerve, produced as I have just previously explained.

Before passing to the next part of my lecture I wish to say that paralyzes of the various nerves entering the orbit are often caused by blows on the head, and no doubt generally indicate some fracture of the base of the skull ; they are often associated with paralysis of the facial and auditory nerves. As in disease, so from injury, paralysis of the sixth is by far the most common, no doubt in consequence of its more intimate contact with the bone, lying as it does in the floor of the cavernous sinus ; while the other nerves pass through the outer fibrous wall—it is often double.

These injuries are usually easily diagnosed by the paralysis of the ocular muscles being apparent; or failing that, by the presence of diplopia. A careful examination of the diplopia will disclose what muscle is at fault. The nerves may be injured as they pass through the sphenoidal fissure into the orbit, or in the orbit itself.

Paralysis of the superior oblique is sometimes caused by injury to its pulley, of which I have had a recent example; but this is more likely to occur, as in my case, from wounds, than from a blow.

As these various paralyses were fully dealt with in the Middlemore lecture given by my colleague, Mr. Wood White,* I do not propose to do more than remind you that blows are a common cause of such affections, as time would not permit of my going into the intricacies of ocular palsy.

(To be continued.)

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

BY JOHN W. TAYLOR, F.R.C.S., ENG.

SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL
FOR WOMEN.

(Continued from page 26).

V.—WARTS OF THE LABIA.

(a) GONORRHŒAL WARTS

("Papilloma," "Vegetations," "Pointed Condyloma," "Oozing Tumour").

It is unfortunate that there is still but little agreement among authors as to the nomenclature of this affection, for in its advanced stages it forms a very definite and striking disease of the female genitals.

The disease is always (?) associated with chronic gonorrhœa, and is essentially one of early adult life. It commences insidi-

* *Birmingham Medical Review*, March, 1892.

ously by the formation of a few scattered pointed outgrowths of the skin near the vaginal entrance—hypertrophied papillæ or warts. These cause no pain or inconvenience to the careless patient; and, in spite of the fact that they tend to increase in number and size as time goes on, the condition too often is absolutely neglected. Finally, the disease results in an extensive cauliflower-like growth, or tumour, which may be as large as a child's head (Schroeder), and covers the labia and perineum (as the cauliflower covers the stalk), extending even to the anus, completely filling the space between the thighs, and preventing free movement. Now the opposing masses of papilloma become sore and raw; the patient is unable to work; she cannot even walk except with difficulty, and is absolutely forced to seek for treatment.

The outline of the growth is irregularly festooned or bunched; the surface is convex, minutely lobulated or granular in the centre, and minutely pointed at the edges; its colour is pale red. On forcible touch, it breaks with a somewhat crumbling fracture, and the consequent bleeding is marked and difficult to control except by pressure. The granulations of the surface, which at first look as if evenly disposed on a common base, are seen, on closer examination, to be divided into lobules, but the division is obscured by the pressure of the growth. From the surface thus formed, a thin watery discharge exudes, of exceedingly foetid smell, hardly to be distinguished from that of advanced malignant disease. This smell is so objectionable and penetrating that the patient becomes loathsome to her companions and neighbours, and hospital patients in adjoining beds will complain of having to remain near such a case so long as the tumour is present.

Some writers have held, rather loosely, that any irritating discharges may cause the disease, but I have never met with it apart from gonorrhœa, and believe that gonorrhœal infection is an essential factor in its production. Most modern authors hold or tend to hold this opinion. Dr. Mann writes:—"It is nearly certain that the presence of an irritating discharge, without the specific cause of this disease, is not enough to

cause the formation of the growths. Further experimentation and observation is necessary to place this among the accepted facts, but enough has been done to render it all but settled. Germs, the gonococci of Neisser, have been found in the growths themselves and in the discharges accompanying them."

But while gonorrhœa is the essential cause, it is highly probable that very prolonged contact of the infective discharge is necessary for the production of these growths, and that want of cleanliness is an important accessory cause. The disease is the product of gonorrhœa and neglect, and the result of this is occasionally so horrible that anyone who sees the disease for the first time in its full development may well be astonished that so extensive, malignant-like, and foul a tumour can yet be so simple in its origin, so "innocent" in its nature, and so easily and permanently cured.

Two excellent illustrations of this disease are to be found in our text-books of Gynæcology—the one in Professor Pozzi's *Traité de Gynécologie* (p. 1,014), under the name of "Vegetations Simples," and the other in Emmet's *Gynæcology* (1880, p. 602), under the title of "Oozing Tumour of the Labia." Both of these drawings are so good that I would rather refer the reader to them than attempt any sketch of my own.

Dr. Emmet, who was one of the first to describe the advanced stage of this disease (under the name of "Oozing Tumour"), writes:—"This is an irregular papillary or cauliflower-like growth springing from one or both labia, the prominent feature being a profuse acrid and watery discharge which is exceedingly offensive. It is supposed to be due to a want of cleanliness, and may occur at any age." (?) In describing a case which occurred in a patient aged 16, he adds:—"The growth could be separated by the fingers into distinct lobes, each springing from a separate pedicle, but branching out so as to present on the surface a continuous growth, like the fastigiata cymes of certain umbelliferous plants, and filling the whole space between the thighs. On a careful examination, separate papillæ could be distinguished, about one-third of an inch in length, and all closely packed together."

In my own cases of the advanced disease—some five or six in number—all of the patients were young (under 30 years of age), and all had history or strong presumptive evidence of gonorrhœal infection. The colour of the vegetations or tumour-surface was red as compared with the surrounding skin, and the growths stopped rather abruptly at the vulvo-vaginal margin. In one case an offshoot or tongue of warty growths extended for some little distance on the posterior vaginal wall, but in the other cases the vagina—or the further side of the hymen—was found to be free from the disease.*

When acting-surgeon to the Skin and Lock Hospital, some years ago, I frequently met with cases of gonorrhœal warts in the male subject, but in only one case have I ever seen any development of this in a man at all commensurate with that which I have described as occurring in the female. In this case the penis was absolutely buried in a mass of vegetations, and it was only by a careful and most tedious dissection that a cure was effected.

The treatment consists in the removal of the growths. Various methods have been advised for doing this, especially the use of the cautery-loop or *écraseur* when the tumour is large. Even within quite recent years I have repeatedly seen a surgeon treat this complaint by amputation of the labium majus on each side with the *écraseur*. The disease was very completely removed in this way, but at the cost of considerable loss of healthy tissue, and consequent permanent disfigurement. Such a proceeding is clumsy and altogether unnecessary. The growth should be removed, but without injuring the parts beneath.

The patient, being anæsthetised, should be placed (and secured) in the lithotomy position, the parts being thoroughly cleansed with a 1 per cent. solution of lysol. Then the growth should be removed with scissors. In doing this, two difficulties are met with. The first difficulty (when the tumour is large)

* I have often met with warts within the vagina (especially along the sides at the lateral reflexions or angles) without any trace of vulvar out-growths; but these are flat on the surface, never very extensive in growth, and it is questionable whether they are really of the same nature as those I am now describing.

consists in finding any certain line of demarcation between the sound skin tissue underneath and the tumour sprouting above it. The best guides, if scissors or knife be used, are the sense of resistance offered by the tissue to the excising blades, and the visual remembrance or picture of the natural contour of the parts affected. The papillary outgrowths are of less consistence, less firm, and more friable than the true skin underneath, and with a pair of scissors, slightly curved on the flat, it is quite possible to start from one edge or side of the growth and slowly shave it off, leaving the true skin below altogether uninjured.

The second difficulty is hæmorrhage. This is apt to be copious, but can *always* be controlled by pressure. When a portion of the tumour has been removed, the surgeon's hand is followed by the sponge, and pressure maintained by assistant or nurses as he proceeds—successive sponges covering the denuded parts—until the whole of the vulva has been set free. Then the sponges are removed in the order of the dissection, any spouting vessel is seized with catch forceps and ligatured, or if (as usual) there is only general oozing, the surface is lightly touched with the thermo-cautery, and the sponge is at once replaced by a pad of absorbent wool (in gauze) which has been rendered sterile by heat or squeezed out flat from a hot boracic or lysol solution. In this way the whole of the raw surface is covered by aseptic pads instead of the sponges. If not already attended to, the bladder is now emptied by a catheter, a large dry pad is placed above the immediate dressing, and the whole is fixed in position by a well-applied **T** bandage—that is, a broad bandage applied between the legs, and fixed (back and front) to a waist bandage or belt. In this way any superficial hæmorrhage from the vulva can be controlled as efficiently as that from the scalp, (and by similar means), although many practitioners appear to be scarcely aware of this. In six hours, or less, the immediate dressing may be changed for one of boracic acid ointment (gr. xxx. ad. 3), dry pads being placed above this, and the **T** bandage re-applied. There is usually no difficulty about the healing of the parts, and the warts do not return. If there be

any gonorrhœal vaginitis, this should be healed by vaginal suppositories of silver nitrate (gr. $\frac{1}{4}$) and gentle douching (by the backward current) with dilute lysol or sublimate solution, nitrate of silver being the best germicide in gonorrhœa. (Neisser.)

These remarks as to the treatment of any gonorrhœal vaginitis, which has usually spent itself before the production of extensive warty growths, apply with still greater force if any case be observed at an early stage, when only a few scattered warts or small bunches of vegetations are present. Then the thorough treatment of the gonorrhœa may be sufficient of itself to cure the whole complaint, especially if the external parts be kept free from moisture. It is wiser, however, to remove the warts at once, or to keep them dusted with compound savin powder (pulv. sabinæ, zinci oxidi $\bar{a}\bar{a}$ part. $\bar{æ}$ equal.), an old remedy which is efficacious in minor cases.

(b) "THROMBOTIC WARTS."

This rare disease, which was first described by Mr. Jonathan Hutchinson in 1891, may sometimes affect the vulva. I have met with one case which exactly answered to the description given by Mr. Hutchinson. On both labia, but especially on the left labium, I found "little elevations or thickenings of epidermis from the size of pins' heads to that of large shot, and of a deep purple tint. The purple tint was clearly due to venous blood, but it was not felt in the vessels and could not be removed by pressure."

In some places two or three "warts" appeared to have coalesced, forming an irregularly rounded little mass as large as three or four shots laid close together, and in several places two of these formed an irregular oval. The nodules were hard, hemispherical in shape, and rather purple or reddish purple in colour. On the left labium I counted as many as eighteen of these little nodules. Most of them I removed with scissors, and found them to be quite solid. A section through the base of a nodule showed a firm centre, of whitish colour; outside of

this, a perfect little circle of dark red colouring matter, and outside of this the epidermis.

Where a double nodule had been cut through, one saw a double circle at the base, which looked exactly like the section of some small vascular loop with thickened walls, but the absence of any lumen, or trace of the latter, negatived the possibility of this. It appeared to me that the nodules might really be the result of minute hæmorrhages which had set up hypertrophic or warty changes in the skin. But no reason for their presence could be discovered; there were no dilated vessels anywhere in the neighbourhood of the eruption, nor had there been the slightest evidence of capillary hæmorrhages in other situations.

I have to-day (January 10th) found my original notes of the case. The patient, E. B., came to my out-patient room, at the Priory, on November 20th, 1889. She was 49 years of age, had been married twenty years, and had five children, the youngest being 7 years old. I noticed the condition at the time as something altogether new in my experience, and it was not until some eighteen months afterwards that I found in Mr. Hutchinson's paper a description, as I believe, of this affection and the name suggested of "Thrombotic Warts" which I have here adopted.

REFERENCES.

(a) GONORRHEAL WARTS.

- Emmet.*—Gynæcology (1880), p. 602.
Pozzi.—Traité de Gynécologie, p. 1,014.
Mann.—American System of Gynæcology, vol. i., p. 533.
Guerin.—Maladies des Organes Génitaux externes, p. 375.
Bumstead and Taylor.—Venereal Diseases, p. 199.
Tait—Diseases of Women, vol. i., p. 22.
Schroeder.—Krankheiten der Weiblichen Geschlechtsorgane, p. 530.
Dührssen.—Gynækologisches Vade-mecum, p. 39.
Neisser.—At Dermatological Congress, Berlin, 1892.

(b) "THROMBOTIC WARTS."

- Hutchinson.*—British Medical Journal, July 4th, 1891.

A METHOD OF RESTORING PERSONS APPARENTLY DEAD FROM CHLOROFORM.

BY CHARLES A. LEEDHAM-GREEN, M.D. HEIDELBERG, F.R.C.S. ENG.

IN reading the reports of death from chloroform, one is struck with the number of cases in which the cardiac symptoms predominate over the respiratory, and the inefficiency of the means at present employed to avert the fatal result in this class of cases. So long as the difficulty is confined to the respiration, the means for its relief are excellent, and almost always successful. Indeed, to quote the words of Professor König at the Annual Surgical Congress in Berlin last year, "no surgeon ought to lose a patient from chloroform asphyxia." But when the mischief is cardiac—when the heart suddenly fails and finally stops—none of these remedies can be confidently relied upon. The reason for this seems to be that they affect the circulation indirectly only. While those now in use which are directed more especially to the restoration of the heart's action—such as the hypodermic injection of ether or strychnine, inhalation of nitrite of amyl, and stimulation of the skin—are valuable only when the onset is gradual. In the severer forms of heart failure the complete or almost complete cessation of the circulation and the abolition of all reflex action render their use futile. Any new treatment, therefore, which, aiming to restore the respiration, is especially directed to the recovery of the heart's action, deserves our most careful attention.

Such a method was described in the *Berliner Klinische Wochenschrift* for 1892, in an article by Dr. Maas, of Göttingen. Little notice was taken of it at the time. It was, however, again brought prominently forward by Professor König at the Surgical Congress, at Berlin, in 1893. The method advocated was a slight but important modification of the well-known one suggested by Professor König himself. As originally practised by that Professor, the operator, standing on the left side of the

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patient and facing him, placed the ball of the thumb of the opened right hand upon the patient's chest, between the place of the apex beat of the heart and the sternum. He then repeatedly pressed in the thoracic wall with a quick strong movement at the rate of thirty times to the minute.

Dr. Maas was led, through the following incident, to modify this procedure in one particular, and thereby greatly to enhance its value. A boy, aged 9 years, whilst under chloroform for cleft palate, suddenly ceased to breathe; the pupils dilated, and the face became cyanotic. He was at once treated by Prof. König's method; but both pulse and respiration became gradually weaker until at length they stopped altogether, and the boy was considered to be dead. Dr. Maas, who had been compressing the thorax at the usual rate, on learning that the respiration and the heart's action had entirely ceased, became excited, and commenced to compress the chest wall very quickly and strongly (at about the rate of 120 to the minute), and in a short time was agreeably surprised to observe the pupils contract, and to detect faint attempts at respiration. Although the boy's life hung in the balance for fully an hour, during which time this quick compression had to be continued, in the end he recovered.

Since that time the quick compression of the precordium has invariably been used in the Göttingen clinic and with the best results. Whilst acting there as Assistant to Prof. König I had several opportunities of testing its value and was much struck with its efficacy in case of heart failure. But the most striking instance of its efficiency that I have met with was one in which I had occasion to use it a few weeks ago. The circumstances of the case were these:—A healthy child four months old was under operation for circumcision in the out-patient room of the Queen's Hospital. The child took the chloroform at first very well; and the operation being almost concluded, the lint on which the chloroform had been given had been laid aside for a moment or two. Suddenly the child became deadly pale, the pupils dilated, and the respiration and the heart's action ceased.

The operation was instantly stopped ; the head was lowered and the tongue was pulled well forward. As the child made no attempt to breathe, artificial respiration (Silvester's method) was energetically used. This proving ineffectual, the child was completely inverted for a few seconds, being held up by the heels. Silvester's method was again tried, but without producing the slightest effect either on the breathing or on the heart. At this point I happened to come into the room, just as the anæsthetist declared the child to be dead. I at once examined the child and could not find any trace of life whatever. There was no impulse of the heart to be felt, nor was there the slightest effort to breathe ; the surface of the body was pale and cold ; the eyes were shrunken and the pupils widely dilated ; at the mouth and nostrils a collection of froth appeared together with some stomach contents which had been forced up during the artificial respiration.

Although I did not for a moment doubt that the child was dead, yet, in desperation, I at once commenced the rapid compression of the precordium as described above. For fully three minutes I worked away, apparently without result, during which time my colleague and I discussed the painful questions of informing the waiting mother and the unpleasantness of an inquest. Suddenly we were surprised and delighted to hear a faint gasp, followed in a few seconds by another. A little later I felt a weak heart throb, and in a minute or two more the child began to cry, and all danger was passed.

The points of special interest to be noted in this case are (1) the length of time (seven minutes) during which neither heart-beat nor respiratory effort could be detected ; (2) the inadequacy of Silvester's method, inversion, or ether, to re-establish the circulation and respiration, none of them producing the slightest apparent effect ; (3) the complete recovery of the patient under the rapid and forcible heart-compression.

There can be no doubt that the efficacy of the König-Maas method lies in its direct action on the heart, restoring not the respiration only, but the circulation also. If on a fresh cadaver

the precordium be quickly and forcibly compressed, it is easy to detect a distinct pulse-wave in the carotid arteries; and the pupils will be found to contract as the blood fills the capillaries of the iris.

Although this method is naturally easier of application upon the flexible chest of a child than on the rigid thorax of an adult, yet age does not preclude its use. It need hardly be mentioned that provision must be made for the free entry and exit of the air to and from the chest.

A method so simple and rational, and withal so effective, I feel sure only requires to be better known in order to be more generally adopted.

NOTIFICATION.

BY ROGER CROSSEY, M.D., D.P.H.

FELLOW OF THE BRITISH INSTITUTE OF PUBLIC HEALTH.

"It is good also not to try experiments in States, except the necessity be urgent, or the utility evident."—*Bacon*.

IT has been suggested that all cases of phthisis should be made notifiable to the Sanitary Authorities, just as under the Notification of Infectious Diseases Act of 1889 there is legal compulsion to notify to the Sanitary Authorities who have adopted this Act, cases of typhoid, scarlet, and other infectious fevers. Such a procedure would undoubtedly be of great use if we look at the question solely from a public health point of view. At the present time we are enabled to judge of the amount of phthisis in any district from the death returns alone, and this may lead to very fallacious conclusions. For example, phthisis being often a chronic disease, patients do not necessarily die in the neighbourhood where they first acquire the disease; so that statistics founded on death returns alone may be of little value except as showing the actual number of deaths from phthisis. The death-returns from phthisis in a health resort frequented by consumptives, many of whom had become residents of the

place and not merely visitors, would give us but little useful information. If, however, notification were adopted, we should be able to estimate not only the actual amount of phthisis in any district, but the number of cases *arising* in that district, and thereby should be enabled to become better acquainted with some of the many causes—social, industrial, or otherwise—which tend to bring about conditions contributing to the susceptibility of the individual and favouring the spread of the disease. Such knowledge would undoubtedly be of great use.

Moreover, on a case being notified to the Sanitary Authority, a paper could be sent to the householder explaining in simple language the nature of the disease and the precautions that ought to be adopted by the patient and those about him. One of the great advantages of notification would be its important educational influence. If such a system were adopted, people would begin to recognise the fact that phthisis is an infectious disease; and it seems very necessary that they should do so if the proper preventive measures are to be satisfactorily carried out.

Again, it would be possible to ensure the proper disinfection of houses in which deaths from phthisis have occurred, and this is of considerable importance.

But when we consider the claims of the individual, there is much to be said against any system of notification. Although the science of preventive medicine aims at the general well-being; nevertheless, since the community is made up of units, the claims of these individual units ought to be considered, more especially in the case of a disease like phthisis, which affects such a large number of people.

In some cases, notification would be an extremely harsh and almost cruel measure. For example, a large number of cases of incipient phthisis not only improve, but often, for all practical purposes, are cured; the patient living to a good old age, and eventually dying of some disease other than phthisis. But this curability of phthisis is, unfortunately, not universally recognised, hence it may often be advisable to withhold from the patient the real nature of the disease from which he is suffering.

Take the case of a young girl who has symptoms of commencing phthisis. On physical examination, expiration is found to be prolonged and an occasional crepitation heard at the left apex posteriorly; the sputum contains tubercle bacilli. Under a system of notification the case would have to be notified as one of phthisis. The patient would, consequently, soon learn that she was suffering from "consumption." Not only would her future prospects as to marriage, etc., be ruined, but mental worry and depression might impede if not altogether prevent recovery.

Then again there are difficulties in the way of successfully carrying out a system of notification:—For instance, it is often impossible to diagnose with certainty an early case of phthisis unless the sputum be constantly examined for tubercle bacilli; and this cannot always be carried out as a routine practice. Hence many early cases of the disease would not be notified at all.

Objections such as the above would not apply if *deaths* alone from phthisis were notified to the Sanitary Authorities and power given these Boards to ensure the proper disinfection of infected rooms and houses. Such a measure would readily be brought about by the addition of a few clauses to an already existing Act, and would be of great benefit as a protective measure without being in any way inquisitorial or cruel.

PRACTICAL MEANS TO PREVENT THE SPREAD OF PHTHISIS.

BY R. CROSSKEY, M.D., D.P.H.

FELLOW OF THE BRITISH INSTITUTE OF PUBLIC HEALTH.

"And where it strews the floor swept with a woman's neatness, breeding else contagion, and disseminating death."—*Cowper*.

It has been clearly proved that the *causa causans* of phthisis is the tubercle bacillus, and the contagious nature of the disease is now a well-established fact. The sputum, saliva, and discharges from the respiratory passages have been shown to

constitute the chief sources of infection in phthisis, and should on no account be allowed to become dry. If tuberculous sputum be kept moist, the tubercle bacilli and spores are, as it were, imprisoned; they cannot escape from a wet surface and contaminate the air; but sputum, when dried, rapidly becomes pulverised and mixed with dust. It is thus readily carried into the air and may be inhaled into the lungs. In this way, by means of dried tuberculous sputum, the contagion of phthisis is usually conveyed. It would surely, then, be a wise plan to explain to phthisical patients in what ways they may be a source of danger to others, and to urge upon them the importance of minimising this danger by, as far as possible, adopting precautions which, although apparently trivial in detail, may nevertheless be of vital importance to the community. To put the whole matter shortly:—the expectoration of consumptives is a dangerous infective material which should be destroyed at once, or, at any rate, kept moist until rendered harmless by the use of germicides or by some other means.

For the sake of convenience, phthisical patients may be divided into two classes. On the one hand, those who manage to do their daily work and earn bread for themselves and families; and on the other hand, those who are confined to their houses or beds. The former—"perambulating" cases, if we may so call them—are very difficult to deal with, since it is obvious that only a certain number of the more educated will be inclined to adopt any precautionary measures. The phthisical labourer, for instance, is not likely to refrain from spitting on the floor of a railway carriage. It will be obvious that the preventive measures advocated as regards those confined to their houses will also apply to some extent to the first group of cases.

Perambulating phthisical patients ought on no account to spit on the floor of any room, building, railway carriage, etc. Spitting directly into the fire is an effectual method of destroying the infective material. If a handkerchief be used, it should subsequently be disinfected by being soaked for twenty-four hours in a solution of perchloride of mercury (1 in 500), then washed

and dried. Or, more conveniently, paper pocket-handkerchiefs may be used, which can be burnt after use.

Dr. Heron has suggested that patients should have attached to their handkerchief-pocket a movable waterproof lining, which could be disinfected from time to time or, better still, burnt.

The recommendation to carry about a spittoon containing a little water into which the patient could expectorate, although by far the best plan, is an unpleasant one, and not perhaps so likely to commend itself to the patient as the method of using a pocket-handkerchief and subsequently disinfecting it. A handkerchief should be held before the mouth when coughing, otherwise particles of saliva containing tubercle bacilli may be scattered during the act of coughing.

The room or rooms occupied by phthysical patients should, *if possible*, face south or south-west, to ensure exposure to the sun, the rays of which have a powerful germicidal action on the tubercle bacillus; not only for this reason, but because sunshine and light are in themselves powerful stimulants. Means should also be taken to ensure proper ventilation. As a rule, rooms occupied by phthysical patients are not well ventilated, at any rate amongst the poorer classes.

As bearing somewhat on this, it may be noted that there is a large amount of phthisis in back-to-back houses, where through ventilation cannot be obtained and but little sun can penetrate. Speaking generally, the more ill-ventilated and confined the street, the higher the death-rate from phthisis. The following illustrative case is one of a series contributed to the Collective Investigation Committee of the British Medical Association:—

“In 1862 a servant suffering from phthisis came home to her mother, a widow with three sons and two daughters, all grown up, the father having died of epithelioma. The house, consisting of two rooms and an attic, and lying under the brow of a hill on its northern aspect, was *ill-ventilated* and *worse lighted*. At the end of 1868 the only survivor of this family, she being still alive and healthy, was a thin delicate girl who took little or no part in the nursing. They all died of phthisis, the mother dying last, between 50 and 60 years old.”

Patients confined to the house ought to be supplied with a glass or glazed earthenware spittoon, containing a little water, into which they should expectorate. The spittoon should be washed out daily with boiling water. For wiping the mouth, linen rags might be used, which could be disinfected or (far better) burnt immediately after use. It should be noted that by taking such precautions, not only do patients cease to be a source of danger to others, but benefit even themselves, since the constant inhalation of tubercle germs cannot fail to infect other parts of the lungs which may be already weakened but not actually diseased.

In a large proportion of cases of phthisis the intestines also become infected with tubercle—another instance of auto-infection. The ordinary method of disinfecting the excreta by the use of carbolic acid or other germicides should in such cases be adopted. The bedroom should, as far as possible, be arranged as in other infectious diseases, and, in cleansing the room, everything that has to be cleaned should first of all be moistened; on no account should the dust be “swept up.”

With regard to those nursing phthisical patients, it is extremely unwise that they should sleep in the same bed with their patient. A daughter perhaps nurses a sick mother, or a friend a dying companion; mental worry and bodily fatigue affect the general health; the lungs share in this general malnutrition, and are moreover constantly exposed to infection, with the result that the disease may be acquired. The following case, which was reported in the *Boston Medical Journal*, 1887, vol. ix., bears somewhat on this.

“A young girl, 23 years old, shared the same bed with her younger sister who was dying of consumption. She nursed her to the end, and slept with her until five weeks before her death. Four days after the death this girl showed the first symptoms of phthisis, of which she died two months later.”

Lastly, on the death of a patient the room or rooms occupied by the deceased prior to his death ought to be properly disinfected.

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certain conditions—

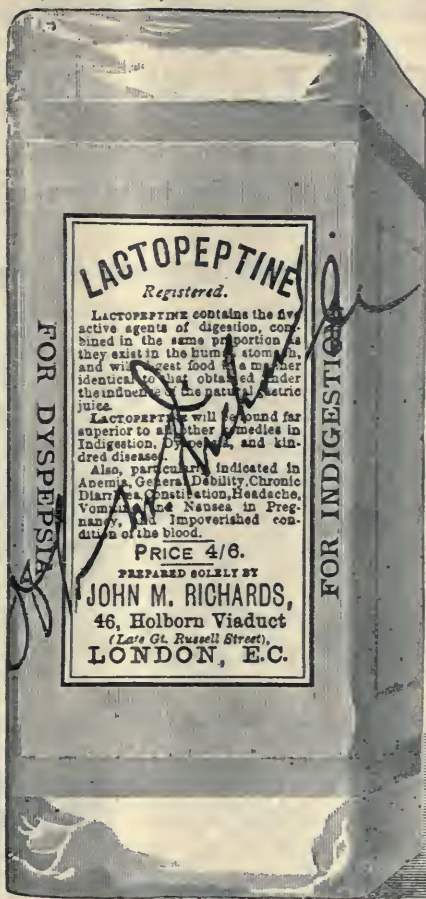
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As an illustration of the danger of sleeping in bedrooms previously occupied by phthisical patients, we may mention a case reported in the *Deutsch. Med. Zeitung* of 1882. A young healthy man went to a health resort and, whilst there, occupied a room and bed which (as was subsequently discovered) had just been vacated by a consumptive, who suffered from suppurating sores. He contracted the disease, and some weeks afterwards died of acute phthisis.

Other cases of the same kind have been reported, in which members of healthy families have lost their lives in consequence of occupying infected rooms.

With regard to the method of disinfection:—No gaseous disinfectant seems to be of much value. Chlorine, for example, apparently has no effect on tubercle bacilli. Steam and boiling water are by far the best possible germicides. The bedding should be subjected to disinfection by steam, the sheets and curtains well boiled. The carpets may be beaten in the open air and the dust caught in straw which should be immediately burnt. For scrubbing the floors, soap or lime and hot water are the best disinfectants; the walls and furniture ought also to be thoroughly cleaned.

When we consider how large a number of people in this country die annually from phthisis, it does not seem unreasonable in the face of recent research to urge the adoption of some preventive measures which would interfere very little with the liberty of the individual and cost but little in their practical application, yet might be the means of reducing the mortality from this disease. That such a result is not altogether imaginary may be seen from the effect of preventive measures adopted in Germany, notably in Baden Baden, where it is stated the number of deaths from Tuberculous Diseases has already diminished to such an extent that the same reduction in the British Isles would mean a saving of 10,000 lives per annum.

REPORTS OF CASES.

A CASE OF POST PARTUM TUBO-OVARIAN ABSCESS IN A PECULIAR POSITION.

BY FRED EDGE, F.R.C.S., WOLVERHAMPTON.

The patient is 21 years of age, of slight but active frame, and generally sound.

Four months ago she was confined of her first-born child, and she informs me that she had a severe confinement. There was no special cause of obstruction nor hæmorrhage, neither was there laceration to any degree of the parturient canal noticed. After the birth of the child she did not gain strength and recover quickly, but had a severe illness with fever, pain in the left side of the pelvis and down the left leg, and a mass in the left side.

When admitted, there was no fever, the pulse was from 90 to 100. She complained of pain in the left side and general debility. The pain was much increased if she was up for a short time.

On examination of the abdomen, a prominence in the left iliac fossa was seen. This could be felt as a firm, rounded, crescentic mass, in which fluctuation was doubtful, and it was dull on percussion. Per vaginam, the uterus was felt to be fixed to a mass on the left side, which spread to the pelvic wall. Bimanually the uterus could be felt distinctly, and a boundary marking it from the lateral mass, but not separating it by any division, was perceived by a difference in consistence and roughness of outline. By the sound, the uterine cavity was found slightly enlarged and dilated, but not more than one would find often at the same period after labour. The mass did not push down the posterior fornix, and the posterior wall of the uterus was free.

As there were no urgent symptoms, the patient was kept at

perfect rest for six weeks, her bowels were constantly emptied by saline aperients, alteratives, absorbives, and counter-irritants, with ichtyol-glycerine applications in the vagina and hot douches and enemata were all carefully tested, and their conjoint action was accompanied by a gradual lessening of the swelling, and would perhaps have attended its disappearance if the patient could have been *rested* indefinitely. At the end of six weeks she was allowed up for a couple of hours, and she next morning noticed a great increase in the size of the mass and in the pain and discomfort.

From the shape of the swelling, its position, the absence of fever, and its history, I diagnosed the condition as one of pyosalpinx with cellulitis of the broad ligament; and as I could not keep the patient on her back indefinitely and she was a labouring woman, I thought it would be good practice to explore, and if found, to remove the pyosalpinx.

On opening the abdomen, great adhesions were separated, and then for some time I could not make out the condition of the parts, nor what I had to deal with, nor what I was going to do.

The pouch of Douglas was free, which rather put me off pyosalpynx, and I was inclined to think that I had to deal with a simple plastic cellulitis of the left broad ligament. The omentum was in a column or rolled bundle and was adherent widely in the left iliac fossa, which is uncommon in simple cellulitis. I tried to separate its adhesions but failed, as the bleeding became severe. I then tied the whole omental bundle in two places, cutting between. It was evident now that the tube and ovary were implicated, and the resulting mass, which contained a fluctuating cyst of Tangerine orange size, was fixed high in the left pelvic wall and in the left iliac fossa, where the omentum had covered it and adhered to it and the parietal peritoneum. The tube and ovary and broad ligament with omentum were removed together with some parietal peritoneum which was torn off. The attachments were tied off in two pedicles, one at the horn of the uterus and the other at the

pelvic wall. The separation was very difficult, and the sygmoid flexure, which was intimately adherent, was badly torn, but not sufficiently in any place, so far as was noticed, to require suturing. A Keith glass drainage tube was used after washing out with Mr. Lawson Tait's apparatus. The patient's pulse and temperature before operation were 90 and 98 respectively.

There was collapse and great pain, so that an injection of morphia was given. (In my own abdominal sections I have only given morphia twice before, and each case died, so that necessity is great before I use morphia). An enema of 1 teaspoonful of common salt, $\frac{1}{2}$ oz. of brandy, 1 oz. of milk, 5 oz. of water, was given three times in the night.

Evening of operation, P. 124, T. 98°. Next day, Nov. 17, P. 140, T. 98·8°. Slight distension was treated by calomel and enemata of soap, turpentine, glycerine, and castor oil. At 9 p.m. on Nov. 17, T. 99·2°, P. 152.

The bowels did not act either with flatus or fæces, and on the 19th fæcal matter exuded from the abdominal wound freely. As the enemata were irritant they were changed into free irrigation of the rectum with normal saline solution, which passing upwards helped to clear the abdominal channel.

The patient gradually improved, and although the fæces passed through the abdominal incision alone for three days she felt better. Gradually more passed per anum, and now the fistula is almost closed. She is walking about at present and gaining strength and flesh.

These fistulæ are very chronic, and no doubt the silk ligatures act as setons.

The points of interest in this case are to my mind as follows :—

1. The absence of fever when the patient was kept resting. This seems to point away from pus in any cellular tissue, and is more in accord with pus contained in a cavity lined by mucous membrane or its homologue, as an ovarian follicle.

2. The peculiar position of the mass of exudation and adhesions around the cyst containing pus.

In these cases of post partum suppuration of the appendages

it must be remembered that the germs have already gained access to these parts, often at or before conception from the other side has taken place. They are generally unilateral. Hence the tube which is carried up into the level of the iliac fossa during pregnancy, if inflamed, would form adhesions at this level, and after labour the descent of the uterus would tend to drag upon the adhesion and permit leakage which would excite peritonitis and fix the omentum.

A condition similar to this, if not the same, was described by Mr. J. W. Taylor, and he pointed out in certain cases the difficulty of making out such a tube sac owing to its position.

3. The frequency of post partum suppuration in the tubes and ovaries.

When we reflect on the possibilities which the corpus luteum of the ovary—a mass of lowly organised clot,—the widely patent tube in which ciliated epithelium must be merely side fringes at these times, and the uterine and vaginal states, we cannot be surprised at this. The abscess usually distends the ovary, but the tube mouth is spread on the ovary, and if detached, the abscess ruptures, as did the abscess cyst in this case.

4. The passage of fæces and flatus through the fistula alone for three days.

This only shows the extent of the deficiency in the bowel wall, and perhaps the collapse of the distal bowel. This exercised my mind somewhat as to treatment. At first I put a glass, then a thick rubber drainage-tube into the rectum, thinking to prevent the passage through the fistula by providing a constant escape per anum; but I afterwards removed it because it occurred to me that by keeping the distal bowel always collapsed I might entirely defeat my purpose, since the laceration in the bowel would thus be brought to gape more widely, and thus offer a direct passage into the fistulous track. This is merely theory; but it may be useful to think of these minutiae in certain cases.

It may be asked whether the operation has been of use at all, and I can answer that I believe it has, because it has removed

a sac of pus from the pelvis. This sac would not have become absorbed quickly. (The lessening by treatment was of the surrounding inflammatory exudation and adhesion chiefly.) It could not without rupturing an organised cellular wall escape externally, as a cellulitic abscess does, and finally heal after a long discharge. If it had subsided for a time so far as to allow conception again to take place, there would have been trouble during pregnancy, and every possibility of rupture and fatal peritonitis at the confinement.

Should the fistula not close within six months, I shall, with the patient's consent, re-open, and remove the silk ligatures if possible. At such a depth I should not try to find the opening in the bowel and close it, unless, indeed, I am mistaken as to the remoteness of the fistula.

LYMPHANGIECTASIS OF THE EYELIDS AND CONJUNCTIVA

BY W. D'E. EMERY, B.SC., M.R.C.S., L.R.C.P.

OBSTETRIC AND OPHTHALMIC HOUSE SURGEON, QUEEN'S HOSPITAL.

THE study of the diseases of the eye is of special interest to the pathologist, from the accuracy with which morbid changes—such as neuritis, embolism, and catarrh of mucous surfaces—can be watched during life, and the effect of treatment observed. In the following case the nature of an otherwise mysterious tumour was made clear by the state of the conjunctiva.

A. P., aged 12 years, was admitted to the Queen's Hospital, under Mr. Priestley Smith, suffering from a swollen condition of the upper and lower eyelids and the skin round them, closely resembling the appearance caused by the œdema in acute Bright's disease.

His mother states that at birth his face was quite natural, and remained so till he was a year old, when one eye became swollen. A week after this the other eye was similarly affected. The onset is said to have been rather rapid, but little reliance is

to be placed on the history. Since then the condition has remained substantially the same, except for slight variations such as have occurred while he has been under observation.

On admission, the upper and lower eyelids on both sides were thickened and puffy. This condition extended above the orbital margin for about half an inch, below it for about one inch, and outwards for about an inch and a half. There is no visible sharp upper margin, but the lower and outer borders are sharply defined. The edges all round can be felt plainly. The thickness of the swelling just under the lower lid is about a third of an inch. The skin appears healthy. At first there was no pitting even on prolonged pressure, but afterwards it became softer, and pitted slightly. Internally the upper half or two-thirds of the nose is affected in a precisely similar manner, the thickening being very obvious and readily perceptible on pinching up the skin over the bridge of the nose. In consequence of this increase in thickness (which is obviously in the subcutaneous tissue), the canthi are pushed apart, thus giving rise to an appearance like that of epicanthus. The distance between the internal canthi is one inch and three-quarters instead of about an inch. The condition is absolutely symmetrical.

On admission, there was some marginal blepharitis and some muco-purulent discharge from the nose. It was thought that this local irritation might have had some influence in keeping up the pathological condition of the eyelids; but this did not improve in the slightest when the inflammatory process was cured. There was no evidence of any other disease, local or general. The boy was otherwise well developed and intelligent. The urine was normal, but during his stay in the hospital occasionally contained faint traces of albumen.

Thus we have in this case an appearance much like that presented by the eyelids and loose tissue round them in acute Bright's disease, but of long duration, and unassociated with any general disease. The nature of this thickening is at once evident from the conjunctiva, which shows very beautifully the

condition of lymphangiectasis. The whole ocular conjunctiva in each eye is covered by a close network of greatly dilated and very tortuous lymph vessels with transparent colourless contents. It is difficult to make sure of its existence on the palpebral conjunctiva, but its presence is indicated by a small transparent lobulated tumour close inside the upper punctum. This proved, on microscopic examination, to be formed of dilated lymph vessels similar to those seen on the ocular conjunctiva.

The solid character of the swelling, the absence of pitting, and the symmetry, suggested at first that the condition was allied to myxœdema or cretinism. The apparent width between the eyes also favoured this view of its pathology. Against it were the facts that it was so strictly localised; that the patient's intelligence and general health were good in every respect; and that the thickening in the tissues was caused by dilatation of the lymphatics, and not by growth of new myxomatous tissue. The patient was, however, treated with thyroid extract, but no improvement took place.

It was suggested that the dilatation of the lymph vessels might be caused by blocking of the deeper sinuses, lymphatic or venous, draining this area. This might afford an explanation of the symmetry, but this view is untenable on many grounds, such as the chronicity, the freeness of the anastomoses, and the diversity of destination of the vessels draining the affected area. Besides this, obliteration of a whole set of lymphatics is not, except in rare instances, as in elephantiasis, followed by lymphangiectasis; and although venous obstruction might account for such symmetrical œdema it could hardly cause its peculiar localisation, chronic course, or dilatation of the lymph vessels of the conjunctiva.

The question of a nervous origin was also raised by its bilateral character, the occurrence of œdema in affections of the fifth nerve being well known; but there was no pain or other evidence of nerve affection. In this connection it may be mentioned that the case presented some analogy to the rare

disease known as Angio-neurotic œdema described by Quincke and others, and characterised by the sudden appearance of œdema caused by dilation of the vessels. The eyelids are a usual seat of the disease. The œdema is, however, generally only transient, and there is a marked history of hereditary predisposition, which was absent in this case.

All things considered, the case seems to present most analogies to a tumour, such as a nævus; it is in my opinion a cavernous lymphangioma. They are referred to by Erichsen as "excessively rare tumours composed of dilated lymphatic vessels communicating with one another like the spaces of the cavernous angioma, the cavities containing lymph instead of blood." He also refers to the fact that one variety of macroglossia has a similar structure. This is of interest in the case under discussion, as macroglossia and the allied disease, macrocheilia, are also bilateral. The above-mentioned authority seems to infer that these tumours are always congenital, but in this case the history seems to be quite clear that it came on some time after birth; in fact the whole history of growth and cessation of growth without retrogressive changes reminds one forcibly of the clinical history of nævus.

Mr. Hutchinson has described a similar disease under the name of lupus lymphaticus. In this affection the skin appears to be the seat of groups of deep-seated vesicles. It occasionally occurs on ordinary nævi, and this, together with its structure, indicates its connection with ordinary angioma. The case under discussion seems to agree with this affection, except that the dilation has not gone so far as to form cysts; but this explanation leaves the most marked feature in the case, its symmetry, totally unaccounted for.

The treatment adopted in this case was followed by but little improvement. The marginal blepharitis was cured by means of dilute alkaline lotion and zinc ointment, and the chronic rhinitis by nasal douches of normal saline solution, but as before stated these had no effect on the swelling. The thyroid treatment not having succeeded, the patient was given half a

pint of hot water three times a day, with the idea of increasing the fluidity of the lymph. This appeared to cause considerable softening, but no diminution in size, of the tumour. As a *dernier ressort* a course of arsenic was given, the action of this drug in other lymphatic tumours, as in Hodgkin's disease, indicating its use: but no benefit resulted.

I am indebted to Mr. Priestley Smith for kindly allowing me to publish this case.

NOTES OF A CASE OF SCURVY RICKETS.

BY E. ST. J. WHITEHOUSE, M.R.C.S., L.R.C.P.

LATE HOUSE PHYSICIAN TO THE CHILDREN'S HOSPITAL, BIRMINGHAM.

G. D., a girl aged 1 year and 6 months, was admitted, on the 30th of November, 1894, to the Children's Hospital under the care of Dr. Drury.

Previous History.—Was said to have been wasting for eight months; had been weaned when six months old, and since that time had been fed on Ridge's Food and cow's milk. Was continually crying out as if in pain, especially when picked up or handled in any way. There was no history of syphilis.

Condition on Admission.—Child is small and very emaciated; lies in bed without any attempt at movement; the forehead is square, and the anterior fontanelle is unclosed; the gums are swollen and spongy, of a dark purplish colour, bleeding readily when touched; has four upper and two lower incisor teeth, which are all in a carious condition. The ends of all the long bones are enlarged, and the ribs show extremely well-marked beading. There is considerable swelling around both shoulder and knee joints. On grasping the head of either humerus and rotating its shaft, distinct movement, accompanied by a rather soft crepitus, can be felt. The lower epiphyses of both femora are similarly separated from their shafts. The right thigh is occupied by a deep-seated swelling running the length of the shaft of the femur; the swelling is tense, and elastic to the

touch. Any movement of the limbs causes the child to cry out as if in pain.

Progress of Case.—The child was given fresh milk, and a teaspoonful of orange-juice was administered three times a day. The condition of the gums improved considerably after the second day, but the general condition showed no improvement. The bowels were opened frequently, the motions being small, loose, and light in colour. The temperature varied between 101 and 105°. The child died on the eighth day after admission.

The temperature observed was as follows :—

	a.m.	p.m.		a.m.	p.m.
Nov. 30.	—	102	Dec. 4.	103·8	104
Dec. 1.	101·4	103	„ 5.	102·4	103·4
„ 2.	102·6	102·8	„ 6.	101·2	104·8
„ 3.	100·8	104·8	„ 7.	102·8	103·4

Post mortem. December 9th, 1894. — *Thorax*—The lungs weighed 4½ oz. There was a considerable hæmorrhage between the visceral pleura and the lower lobe of the right lung, the lung tissue of this lobe being congested and œdematous, and but slightly crepitant. There was another small sub-pleural hæmorrhage in the upper lobe, the lung tissue appearing healthy. The lower lobe of the left lung was in a similar condition to that of the right, the upper lobe being healthy.

Heart.—Pale and small, a small *post mortem* clot in the right ventricle, the other cavities being empty; valves competent, no staining of the endocardium.

Abdomen.—The *Liver* weighed 8 oz, and was marked on its surface by the ribs, the organ was very pale and had the naked eye appearance of fatty liver.

Kidney.—Weight 1½ oz., pale and lobulated, capsule stripped easily.

The *Spleen* weighed under ½ oz., was very dark in colour.

Intestines a good deal distended, were stained with bile in places, appeared to be otherwise healthy.

Bones.—The periosteum of the right femur was separated from its shaft by a large extravasation of blood partly fluid and partly coagulated; the lower epiphysis was separated from its shaft. The knee-joint was healthy. The periosteum was also separated from the shaft of either humerus by a like effusion for about the upper half, both upper epiphyses being separated from their shafts. The beads on several of the ribs were cut into; there was no sub-periosteal effusion, the cartilage simply showing irregular ossification.

PERISCOPE.

DISEASES OF DIGESTIVE SYSTEM.

BY O. J. KAUFFMANN, M.D.

Pancreatic Concretions.—A case of illness diagnosed by the writer (Holzmann; *Münch. Med. Woch.*, Nov. 20, 1894,) to be due to pancreatic concretions is of interest. The chief points on which the writer lays stress are the following:—Severe attacks of pain of varying duration, commencing immediately beneath the costal arch on the left side in the nipple-line; copious ptyalism accompanying the pain; and later, the occasional presence of small quantities of sugar in the urine and, after the severest paroxysms, a moderate degree of fever. Regarding the excessive flow of saliva, which to all intents resembled ordinary water-brash, Holzmann recognises that it is met with in connection with diseases of the stomach. In the present case all gastric disease was excluded by the most careful clinical enquiry. The case suggests that, regarding the frequency with which water-brash is observed, clinicians might look more frequently for sugar in the urine, with a view to discover whether, in some of these numerous cases at least, there may not be reason to suspect the pancreas as being the organ primarily diseased. As for fever, it was not

very high or prolonged, and did not occur until after a particularly severe attack of pain.

Regarding the sugar in the urine, it is worthy of notice that v. Ackeren has described two cases of disease of the pancreas in which the sugar had the constitution of maltose, not of grape sugar (*Berl. Klin. Woch.*, No. 14, 1889). In the present instance, however, it could not be proved to be maltose. There appeared, in the case under consideration, to be no constant relation between the painful attacks and the intermittent glycosuria. Before the patient's admission to Eichhorst's clinic (from which this report appears) pancreatic concretions were reported to have been found in the fæces. No excess of fat was found in the evacuations. The treatment is of interest, being based on pharmacological experiment and having apparently been beneficial. It consisted in subcutaneous injections of pilocarpine. ($\frac{1}{2}$ to 1 cb. c of a 1 per cent. solution) and was founded on the fact that this drug stimulates the flow of pancreatic juice, from which it was concluded that it might be useful by lessening the tendency to concretion and by helping to wash out any calculi already formed in the pancreatic ducts.

Disorders of Stomach.—A contribution of great practical interest regarding the treatment of stomach diseases is Rosenbach's paper "On the Use and Abuse of Bi-carbonate of Soda." (*Munch. Med. Woch.*, No. 3, 1894.) At the outset Professor Rosenbach lays stress on the fallibility of several of the most recent methods of investigation of gastric disorders. He deprecates the reliance too often placed in a single sign or symptom as pathognomonic of a definite derangement of the stomach, and brings into special prominence the fact that there is no such thing as a generally applicable limit to the quantity of hydrochloric acid-secretion which may be regarded as normal. The quantity of this acid varies with the individual in health, and many neurotic and anæmic persons suffer great discomfort from the presence in the stomach of a quantity of acid which in others would, according to the usually accepted limits, be distinctly subnormal. It is, moreover, of the greatest impor-

tance, in investigating a case of dyspepsia, to bear in mind the effect which intestinal disturbances have in altering the action of the stomach—a point too often neglected, especially in recent times, owing to the ease with which the contents of the stomach may be examined; whereas those of the small intestine are inaccessible to the investigator. A further physiological point is this, that many individuals require, for the regular peristaltic action of this intestine, a certain quantity of gastric acid, and in such persons regular action of the bowels is induced by the administration of small doses of hydrochloric acid. The general habits of life, and working of the whole digestive apparatus, must therefore be a matter for careful inquiry by the physician before he proceeds to treat what is the most evident and often the sole complaint which the patient makes—viz., pain in the stomach.

It is undoubted that in the great majority of cases of gastric indigestion—whether an excess of hydrochloric acid can be proved to be present, or whether there be only motor and sensory disturbances of the stomach without evidence of over-acidity—bicarbonate of soda acts beneficially for a time, and relieves the most pressing discomforts of the sufferer. Consequently, this drug is exceedingly popular; and being, moreover, harmless in itself, it is largely taken either without medical advice or its use is prolonged until, as is presently to be shown, it works positive harm.

The undoubted sedative action of sodium bicarbonate is most marked in two classes of cases. The first group includes all instances in which the stomach contents become too strongly impregnated with acid, either owing to a true over-secretion of hydrochloric acid compared with the normal quantity for the individual in question, or in consequence of an anomalous formation of organic acids, as acetic, lactic, and the fatty acids, which results from the nature of the food ingested, and frequently co-exists with an insufficient secretion of hydrochloric acid by the peptic glands. The second great group of cases readily relieved by the administration of sodium bicarbonate

comprises those cases of over-sensitiveness of the stomach which exist in spite of the secretion of strictly normal gastric juice. Sufferers of this class form the vast majority of chronic dyspeptics, and are, in Rosenbach's opinion, frequently, seriously damaged by the prolonged use of alkalies. In these groups the salt in question acts as a sedative; in the first group by neutralising the excessive acidity, in the second by neutralising an acidity which is not really excessive, but which, small though it be, produces pain in the stomach. Moreover, the instances of sudden bulimia which are apt to occur in nervous dyspeptics are probably due to a sudden flow of gastric juice, and these attacks are likewise promptly relieved by soda, for the acidity is neutralised, the sensation of hunger disappearing, and there is none of the digestive discomfort which so often attends the taking of food to relieve the bulimia.

Now the first consequence of neutralising the acid is, in healthy people, a stimulus to the secretion of further acid, and a moderate use of sodium bicarbonate thus leads to an increased secretion of stomach-acid—a fact very long recognised. The evil results of sodium bicarbonate occur as follows. In persons accustomed to take considerable quantities of the drug in frequently repeated doses, the acid-secreting glands are stimulated, by the constantly recurring neutralisation of their secretion, to renewed activity, which must soon reach the verge of exhaustion, and will in the course of time permanently injure the secreting power of the glands, and add another factor to the condition of chronic indigestion. Viewed in this light, in fact, the drug is capable of working harm in almost any form of indigestion, and is pretty certain, if employed continuously for any length of time, to render the patient's condition worse. The frequency of the abuse of soda is, as before indicated, due to the regularly produced instantaneous relief which it gives the sufferer.

Another way in which sodium bicarbonate may produce ill effects is as follows:—In cases in which the stomach contents are undergoing acid fermentation, the alkalisation of part of the fermenting mass will, by removing the accumulated acid, permit

a further portion of the stomach contents to ferment, as the microbes producing the fermentation in question are relieved of the accumulation of their own life products. In this way, though the pain and heartburn will be momentarily stopped by taking a small dose of sodium treatment, the original condition of discomfort will return the more quickly for the application of the remedy.

Finally, Rosenbach is of opinion that the most general applicability of sodium bicarbonate is in acute indigestions, especially when caused by excess of alcohol and when the inducing of emesis or the removal of the stomach contents by the tube is inadvisable:

Generally in all chronic dyspeptic conditions, whether they be purely hyperæsthetic (nervous), or catarrhal, or depending upon an excessive secretion of acid, or on fermentation of the stomach contents, the use of sodium bicarbonate should be carefully regulated by the physician and never be allowed for any continued length of time. In the majority of such cases the use of hydrochloric acid after meals is followed by better results as regards permanent improvement than is the use of carbonate of soda.

[Though these remarks apply with more force to continental practice—in which the salt is often handed to the patient in a box and prescribed to be taken by “knife-points-full,”—they nevertheless have their value for this country where the drug is given with almost equal frequency in the form of an alkaline mixture which figures in most hospital-pharmacopœias and which is largely used in almost every practice.]

The confusion which at the present time exists in the minds of many regarding the altered secretion of gastric hydrochloric acid in cases of anæmia is sufficient justification for Dr. Osswald's review of the state of our knowledge on this subject (published in *Münch. Med. Woch.*, No. 27, 1894). The writer commences by citing the results of many inquiries, which may be thus grouped :—In one set of investigations the finding has been in

favour of a diminished secretion of HCl; in a second, the quantity of hydrochloric acid has been found not to depart greatly from the "normal;" and lastly, in the third group the result has been that an excessive quantity of HCl has been found—a view which has enjoyed considerable popularity, as furnishing a ready distinction of this class of cases from those of cancer of the stomach.

Osswald proceeds to investigate the reasons for this divergence of findings, and, leaving out those publications in which the results were manifestly influenced by mental bias and were not strictly borne out by the experimental figures obtained, these reasons may be stated as follows:—

Firstly, whereas one set of investigators have employed Ewald and Boas' test breakfast, others have used Riegel's test meal. Now although every form of meal may be used to provoke the secretion of gastric juice, it must, for the sake of comparison, be first tried on the healthy stomach—a precaution which many have neglected. Ewald's and Riegel's test-meals deserve special confidence, because we do know, from the experiments of these two physicians, what are their effects on the normal organ. But the time at which the stomach contents must be removed—*i.e.*, the height of secreting reaction to the stimulus of the meal—is different for these two meals, and some of the contradictory results may be referred to neglect of this point. Again, the presence of large quantities of albumen in Riegel's meal as distinguished from Ewald's breakfast, leads to much of the HCl being bound in the former, whereas in the latter it remains free, so that when a quantitative estimate of the total acidity by titration is made, the analysis, as compared with the test for free HCl by Congo-red, often gives conflicting results.

Secondly, owing to this last error of experiment, different values have been accepted by different authors as the normal of hydrochloric acid secreted. In connection with this point, Osswald reminds his readers that there is no such thing as an absolute normal quantity, since the amount varies with the individual.

Thirdly, it appears that the mean normal quantity varied according to the territory in which the inquiry was conducted. Thus, in Giessen (Riegel's clinique) the amount was found to be higher than that in Berlin (Ewald's clinique).

[It appears probable that this variation is due to the different forms of diet to which the people in these districts are accustomed.]

Osswald's own researches in this direction consist of a fair number of analyses and led him to the following conclusions, viz. :—

Firstly. The quantity of hydrochloric acid in the gastric juice of anæmic patients is rarely diminished, but in most instances is increased beyond the normal.

Secondly. The dyspeptic troubles of such anæmic patients do not depend upon a lack of sufficiency of hydrochloric acid.

Thirdly. The indiscriminate therapeutic use of hydrochloric acid in such cases is not advisable.

Fourthly. All theories attributing anæmia to insufficient secretion of hydrochloric acid are untenable.

The investigations were conducted almost entirely with the gastric juice of chlorotic, but otherwise healthy young women.

[It is necessary to note that Osswald's results apply therefore to cases in which the anæmia is due to exhaustion or insufficiency of the blood-forming tissues, or, since constipation existed in every one of the patients, to a self-intoxication from the intestinal canal, and not to those cases in which excessive destruction of the blood-corpuscles is the direct cause of the anæmia. It appears, furthermore, that none of the patients examined suffered from any gastric disease beyond dyspepsia and anomaly of secretion, combined with dilation of the stomach in one case.

(To be concluded.)

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The fourth ordinary meeting of this Branch was held on Thursday, January 10th, 1895, the President, Mr. H. LANGLEY BROWNE, in the chair. Present, 33 members.

Dr. Edwin Morton, of Redditch, was elected a member of the Branch.

Dr. Foxwell read a paper on "The Nature of some Forms of Dyspnœa."

Dr. T. Sydney Short read a paper entitled "Observations on the Treatment of Epilepsy."

The following case and specimens were shown.

Arthrectomy of the Ankle-joint.—Mr. Barling showed a female patient, aged 18, upon whom he had performed this operation five months previously for tubercular arthritis. The disease was of two years' duration, and ten months ago sinuses had formed on the outer side of the joint. The joint was opened by an incision commencing two inches above the ext. malleolus, running down the back of the fibula, then round the malleolus and over the front of the ankle-joint to the tendon of the extensor longus digitorum. The peroneus longus and brevis were divided, and the external and part of the anterior ligaments, but none of the other tendons nor the vessels or nerve. This gave free access to the joint cavity. The whole of the synovial membrane was removed, and a sequestrum the size of a small walnut projecting from the lower end of the tibia into the joint. The divided tendons and ligaments were sutured, and in six weeks there was sound and solid union. At the present time there is a little tendency to raising of the inner border of the foot, but the patient walks firmly and without pain, and there is free mobility of the joint.

Ovarian Dermoid Cyst.—Dr. Purslow showed a large ovarian

dermoid cyst which he had removed five days previously. The cyst formed a tumour filling up the whole abdomen and reaching to the ribs, and the patient had noticed her abdomen enlarging for two years. For a fortnight she had suffered from incontinence of urine, evidently the result of overflow, for on admission, her bladder was found to be distended, and 67 ounces of foetid ammoniacal urine was drawn off by catheter. At the operation the bladder, though empty, was found to extend up nearly to the umbilicus, and its walls were exceedingly thin. There were adhesions to the omentum. The cyst contained yellow turbid fluid, which was found, on microscopical examination, to contain flat globules and cholesterine crystals. There were several large masses of sebaceous material, a few hairs, and one tooth. The wound had healed by first intention, and the patient was making a good recovery.

Stricture of the Pylorus.—Dr. Deanesly showed a greatly dilated stomach, the result of a simple stricture of the pylorus. The calibre of the latter at its junction with the duodenum was abruptly reduced to the size of a crow-quill for a length of not more than half an inch. The strictured portion, which involved the whole circumference, was not thickened or indurated, and the peritoneal covering was quite smooth. It had not yet been microscopied. The stomach held seven pints, and its lower border reached to the left groin. Complete pylorotomy could have been easily effected during life, but operation was declined. The patient was a woman, aged 60 years, who had suffered dyspeptic trouble for twenty years. For the last twelve months she had washed out the stomach daily, with great relief.

Anencephalic Monster.—Mr. Christopher Martin showed an anencephalic monster delivered in Nottingham by Mr. Charles Martin. The mother had had several children previously, all well-formed. There was no history of deformities on either the mother's or father's side. The child seemed to have been retained in utero ten and a half months. The delivery took place 320 days after the commencement of the last menstrual period, and six months after quickening. The child was a

female, and weighed 10 lbs. All its finger nails had grown considerably beyond the ends of the fingers. The face presented. The broad shoulders became impacted in the pelvis, and caused great difficulty in delivery. The child was living until shortly before its birth. The only abnormal symptoms noticed during pregnancy by the mother were the excessive and irregular foetal movements.

REVIEWS.

THE VACCINATION QUESTION.*

THE perusal of this little book leaves us with a sense of mingled pleasure and surprise, pleasure that not a single new fact or argument has been brought forward against vaccination ; surprise that arguments so little convincing should carry conviction to a writer of Mr. Hutton's ability. It is strange that Mr. Hutton has not dealt more fully with the political aspect of the question. Here, if anywhere, he would be treading on firm ground. Mr. Hutton, however, appears to have little objection to compulsion provided the protection afforded by vaccination can be shown to be a reality.

To a large extent we agree with him that vaccination is not a question to be reserved for discussion solely by medical men. To us the issues seem so definite and practical, experience so convincing, that there should be no difficulty in making them clear "to the man in the street." Mr. Hutton, however, does not object to appealing to authority when it is on his side. On page 1, we read that "the authority of great names can no longer be quoted wholly on one side," and we gather from the

* The Vaccination Question. A letter addressed by permission to the Rt. Hon. H. H. Asquith, Q.C., M.P., by Arthur Wollaston Hutton, M.A., Librarian of the National Liberal Club. Pages 128. Methuen & Co. 1894.

appendix that the "great names" which have had most to do with the conversion of the writer are those of Prof. Crookshank, Dr. Collins and Dr. Creighton.

A little further on we are warned that at the present day few medical men have any practical acquaintance with the value of vaccination, and it is only those who have had care of patients in smallpox hospitals who are really in a position to give evidence on the subject. We are not aware that any one of these gentlemen possess that (in Mr. Hutton's opinion) necessary qualification.

Following the example of these "great names" much importance is attached to the history and pathology of vaccination. This has always seemed to us to be mere learned trifling. The really important point is simply this, does or does not vaccination protect against smallpox. It is merely darkening counsel by words without knowledge to evade the main issue by making injurious attacks on Jenner's good faith, or drawing subtle distinctions between specific protection and antagonism. Much stress is laid on the alleged independence of vaccinia and variola, but even this argument falls to the ground in the light of recent work by Klein (L. G. B. report, 1893), and Copeman (J. of Pathology, 1894), which conclusively prove that vaccinia is variola passed through the cow.

Apart from this demonstration of the pathology of vaccinia, it is as ridiculous as it is untrue to assert that "the syphilitic nature of cowpox is the theory which now holds the field, and it is hardly questioned by the advocates of vaccination." We know of no one who has the least claim to special knowledge of either syphilis or smallpox, who holds that they have any relation with one another.

The rest of the book is taken up with the old familiar statements, one cannot call them arguments against vaccination. Hospital statistics are dismissed as unreliable because they give so little support to anti-vaccinators. Then we are treated to that ancient superstition that fatal confluent cases are always returned as unvaccinated because the rash conceals the scars,

though everybody that has any experience of smallpox knows that the insertion of the deltoid is a very unlikely spot to find the rash confluent, and that it is not customary to register a case as unvaccinated unless this is borne out by the statement of the patient as well as by the absence of scars.

Equally reprehensible is the attempt to discredit Dr. Gornall's excellent report on the Warrington epidemic because he states that certain of his fatal cases are included in the unvaccinated because they were vaccinated too late, *i.e.*, after infection with smallpox. "If they had recovered," says Mr. Hutton, "the recovery would have been credited to vaccination," and this in spite of the fact that Dr. Gornall credits the unvaccinated class with the recoveries that actually took place among those vaccinated too late (see pages 40, 41 of Dr. Gornall's report.)

Mr. Hutton gets over the immunity enjoyed by smallpox nurses by some loose talk about "constitutional immunity" and "seasoning," and appears to think the protection is no more surprising than that found among the attendants on phthisical patients! After this we cannot but agree with Mr. Hutton (p. 114) that it is in fiction that anti-vaccinators must put their trust, but we would suggest that it should be of a superior quality to that which he has inflicted on Mr. Asquith.

THE DISORDERS OF SPEECH.*

ONE of the most important contributions to medical literature that has recently appeared, is Dr. Wyllie's book on "The Disorders of Speech." Part of this work has already come out in the *Edinburgh Medical Journal*, and we can now congratulate ourselves on having the whole in one volume. Of the three parts into which the book is divided, the first treats of the functional disorders of speech (Stammering, Hysterical Aphonia, and Mutism, the Affections of "Professional Voice Users," etc.).

* The Disorders of Speech. By John Wyllie, M.D., F.R.C.P. Ed. Edinburgh: Oliver and Boyd.

The second refers to Developmental Derangements; the third to Speech in its relations to Diseases of the Nervous System.

The author says that for the production of speech two mechanisms are necessary, that of the larynx, and the oral mechanism. The former—the voice producer—he compares to the bow-hand of the violinist, the latter to some extent to the string-hand, for by it the sounds of the larynx can be modified in tone or timbre, though not in pitch, as they pass through the oral cavity. By it also, new sounds produced in the mouth can be added to the vocal tones of the larynx. These two mechanisms must be perfectly co-ordinated or there will be defective speech. Delayed action of the laryngeal mechanism appears to be the cause of the common varieties of stammering. Consequently, when a stammerer finds that the voice element is not properly co-ordinated, not up to time as it were, he is extremely liable to throw more energy into the other and wrong direction, namely, the oral mechanism. This may cause great difficulty with voiceless explosives (t, p, k) for then the defective co-ordination of the succeeding voice element produces either a silent sticking or a stuttering voiceless repetition of the explosive effect. Moreover, there may be an overflow of energy under these circumstances, producing various facial spasms. Of these the author gives some curious examples.

The difficulty is less when singing, for then the extra attention paid to the laryngeal mechanism would appear to help in its regulation. On this fact is based the treatment of stammering. The well-known instance of Charles Kingsley is mentioned, as showing how a stammerer may overcome the difficulty by intoning.

The author thinks that cases of stammering are sometimes due to imitation; others seem to be the expression of a neuro-pathic diathesis. Of the greater frequency of stammering among males, he says it is not possible to give an explanation; but he draws attention to the fact that they are longer in learning to speak than females.

There is an extremely interesting chapter on Laryngeal

Troubles of Professional Voice Users. Here the similarity between fatigue neuroses of the larynx and writers' cramp is pointed out. The three varieties of this affection—the spasmodic, the paralytic, and the tremulous—have corresponding laryngeal forms. The treatment and suggestions for management of all these cases are given fully, and are most valuable.

As an introduction to the study of developmental defects of speech, there is a chapter on the development of language in the normal child; and the fact is pointed out that, notwithstanding the number of children in the world, very few people seem to have watched the growth of a child's language.

The speech of idiots and imbeciles is described in a very interesting manner, as is also deaf mutism. The defects in speech of persons who lisp, etc., are also carefully studied, and much information is given as to the present systems of instruction in all such cases.

The portion devoted to the purely neurological defects of speech is very full. It begins with speech in relation to insanity. Here is shown the manner in which the mind disorder is mirrored in the speech of the patient; their "speech hallucinations" are shown to be connected with disturbances of the cortical speech centres. Lastly, the affections of speech in dementia are given, as they appear to be of a different type.

The description of aphasia begins with a physiological preface, and then all the varieties of derangement in the speech mechanism are described.

There are various diagrams and plates illustrative of the subject, and copious references to literature are given.

The whole subject of speech disorders is treated in a masterly manner in this work, and the book is invaluable, not only to the neurologist, but also to the psychologist, the student of language, and to those who have to train or teach patients having developmental defects of speech.

DOUGLAS STANLEY.

MANUAL OF DISEASES AND DEFORMITIES OF THE SPINE.*

WE have read Dr. Swan's little volume with pleasure, and can recommend it to those of our readers who have already some practical knowledge and experience of the commoner forms of spinal disorder.

The sections devoted to Potts' disease and its resulting abscesses are especially good, but would be of greater value still were they more systematically arranged. The determination of early symptoms by the position of the primary disorder, the references to the possibility of caries and suppuration occurring without deformity, to the frequent implication of the costo-vertebral articulations, to the causation of secondary curves, and to the rigidity due to chronic rheumatoid disease are of much practical interest. The author's experience of the plaster of Paris jacket is favourable, and we are glad to see him advocate its application in the horizontal position by the "hammock" method originated by Davy, to whom the credit might have been given. The simple pneumatic rest, devised by the author for relieving the cervical vertebræ of the weight of the overlying head, is a welcome addition to our present unsatisfactory means of accomplishing this object.

Dr. Swan's conclusions on the treatment of spinal abscess are conservative and eminently practical, and in the main we agree with them; but we think his attitude with regard to the operation of "Laminectomy" would be somewhat modified if he gave this procedure a fuller trial than he appears yet to have done.

The section on Lateral Curvature contains much that is valuable, and expresses our own views on this deformity. Chapters are introduced on Coccygodynia, Railway Spine, Torticollis, Congenital and Noncongenital Tumours, Embryonic Rudiments in the Sacral and Coccygeal Regions, Osseous

* Manual of Diseases and Deformities of the Spine. By R. S. Swan, Fellow and Member of Council, and for many years Examiner in Anatomy and Surgery and Operative Surgery, Royal College of Surgeons, Ireland, etc. Illustrated. Dublin: Fannin and Co. 1894.

Growths in the Vertebral Region, etc., some of which might with advantage have been omitted from a "Manual" of this kind.

The book is freely illustrated, but from an artistic standpoint many of the plates are exceedingly poor; whilst not a few are really amusing. For example, that facing page 170, in which the figure of the Amazonian nurse is evidently taken from a modern fashion plate, whilst that of the Liliputian baby is after the style of a Tintoretto cherub.

The absence of a definite plan throughout the work, and the want of side-headings to leading paragraphs, make the book almost useless to the busy practitioner; and it would puzzle a senior student of more than average intelligence to grasp the fundamental facts of caries, scoliosis, and many other spinal diseases and disorders even after a most careful study of the volume;

MEDICAL HISTORY FROM THE EARLIEST TIMES.*

THIS very interesting work on medical history begins by reviewing generally the medicine and surgery of pre-historic times, and gives an account of medicine in ancient Egypt, as represented by Sekhet'enanch, chief physician to the Pharaoh Sahura, of the Fifth Dynasty (B.C. 3533?).

As may be expected, however, the real interest of the book begins with the account of medicine in Greece, especially with Hippocrates. The writer shows that the weak point of Greek medicine was a too marked tendency to speculate uselessly rather than to investigate scientifically. A chapter is devoted to comparing Hippocrates and Galen; and the author points out that the eminently practical observations of the former entitled him to a much higher place as a physician than the more theoretical Galen, who rather looked upon medicine as a philosophical system.

* Medical History from the Earliest Times. By Ed. Theodore Withington, M.B. Oxon. Scientific Press Lim.

As to-day, so in Rome the struggle for existence seems to have been keen and competition high, for we read of several physicians who were compelled to take to less honourable but more lucrative callings to escape starvation. One of these, by the irony of fate, becomes an undertaker's assistant. It is interesting to find that there was apparently some system of registration for midwives in Rome.

Passing on to the sixteenth century, there is a long account of Paracelsus, and the judgment is decidedly unfavourable, showing how little worthy he was of being placed above Harvey, Vesalius, and others, as some mystically inclined persons tried to do. All through, the work carries with it a well-sustained interest, and deserves reading with care.

MYXŒDEMA, CRETINISM, AND THE GOITRES.*

THE title of this work raised expectations which we regret to say are disappointed. The author devotes a chapter to Myxœdema, Cretinism, and Exophthalmic Goitre respectively, and a final one to treatment. His contention is that "Graves' Disease" in woman is an autotoxis, most frequently caused by the absorption of purulent products. In man, however, the result is rheumatism, through their action on the medulla oblongata. "If these products," the writer goes on to say, "invade the cerebral cortex in large quantity and abruptly, we get a psychosis, as for instance, mania, or some neurosis such as epilepsy. But if the invasion be more gradual and the poisons be more diluted, we get chorea." We must confess we are unable to follow the author in this hypothetical pathology. In favour of Graves' Disease being due to autotoxis there is certainly much evidence, but it has yet to be proved, and we are certainly not prepared to believe that the absorption of purulent products of pelvic disease is the chief cause. We are firm

* Myxœdema, Cretinism, and the Goitres. By Ed. E. Blake, M.D. Bristol: John Wright and Co.

believers in autotoxis as the cause of many diseases, but that the same products will cause totally different effects according as a male or female is the subject, is going too far. Moreover, when the author goes on to say (p. 57), in speaking of a case, that "autotoxis of the uterine centre, which is probably situated near the vagal nucleus, took place, and she miscarried after the sixth month," we feel it is time to draw the line. The clinical matter is not well arranged, and there is a marked tendency to introduce extraneous subjects.

LUNACY LAW FOR MEDICAL MEN.*

THIS small book is intended as a guide for medical practitioners in their relations with insane patients. It gives an extremely clear account of the present lunacy law, avoiding all legal technicalities which might, to a certain extent, be confusing.

Part 1 deals with idiots, and gives the various forms for placing them in any institution.

Part 2 begins with an account of the procedure for placing under control an insane person who is not a pauper. There is an extremely clear and complete chapter on the medical certificates, and which, if carefully studied, would save much trouble in certifying a patient. There is also a succinct account of the differences between private and pauper patients. These are given in tabular form on page 57. Throughout, information is given on almost any possible contingency that may arise, not only in the certifying of patients by a medical practitioner, but also in their management by those to whose care they are committed.

Part 3 relates to Testamentary and Contracting Capacity and Criminal Responsibility.

This book is one which no medical practitioner should be without.

* Lunacy Law for Medical Men. By Charles Mercier, M.B. J. and A. Churchill.

NIGHT-LIGHTS (SHADOWS FROM A DOCTOR'S READING LAMP.)*

THOSE of our readers who have already made acquaintance with these clever sketches of medical life during their appearance in the *Birmingham Weekly Mercury* will be glad to have an opportunity of obtaining them in book-form, while to those who do not know them we can recommend nothing better calculated to give them a delightful couple of hours. The author is above all a humourist, and his comedy is often of the best kind. We feel as if he had only given us a taste of what he can do, and that in Dr. Kennedy, my Uncle Titmarsh, Dr. Christopher, and Mr. Bottles, we have been introduced to a little group of characters of whom we would willingly know more.

The pictures of Black Country practice and of the hospital surgery and out-patient room are very funny, but are also far from being caricatures. The phases of medical student life are also very lively and interesting, though to our more sober experience they seem to exaggerate the "beer and skittles" side of things. Where there are so many good stories, one hardly likes to choose; but for comedy, "Locum tenens," and for pathos, "Mr. Bottles' Romance," strike us as about the best.

It is pleasant to think of a professional brother able to brush aside for a time the serious cares of practice, and while away his spare moments by conjuring up these quaint fancies for our amusement. Dr. Frost has made a good beginning, and may be expected to go on and do much more in the same line.

URINARY SURGERY.†

THIS volume of two hundred and twenty pages is "an epitome of the literature of Modern Urinary Surgery," and is written for

* Night-lights (Shadows from a Doctor's Reading Lamp). By Arthur Broadfield Frost. Licentiate of the Royal Colleges of Physicians and Surgeons of Edinburgh. The Midland Educational Company.

† Urinary Surgery. By E. Hurry Fenwick, F.R.C.S. Eng., Surgeon to the London Hospital; Surgeon and Pathologist to St. Peter's Hospital for Stone and other Urinary Diseases. Illustrated. Bristol: John Wright and Co. 1894.

the use of students and practitioners. We have read it with much interest and can congratulate its author on the completeness of his résumé, on the accuracy of his compilation, and on the clearness of his language.

The contents of the volume are classified into the following sections:—1. The Surgery of (*a*) the Kidney, (*b*) the Ureters, and (*c*) the Bladder. 2. The Diseases of (*a*) the Prostate, (*b*) the Seminal Vesicles, and (*c*) the Urethra. 3. A special chapter on "Electric Cystoscopy," upon which Mr. Fenwick is able to speak with much authority. And 4. A voluminous Bibliography and a well-arranged Index, which add greatly to the usefulness of the book. Although a wide range of subjects is dealt with the condensation is so judiciously done as to be of real practical value.

The volume is well got up, and does credit to the well-known firm of Bristol publishers.

ASTHMA AND CHRONIC BRONCHITIS.*

DR. THOROWGOOD has incorporated with the new edition of his Notes on Asthma the substance of the Lettsomian Lectures on "Bronchial Asthma" written in 1879. The result is this readable and compact account of asthma and chronic bronchitis.

The author does not agree with the theory of asthma as put forward by Dr. Blackley that congestion of the bronchial mucous membrane is the sole factor in its causation; and, although admitting that congestion causes dyspnoea, he considers that muscular spasm must be present in addition. This was the view that was held by Dr. Hyde Salter, and we believe it is now universally accepted.

There is evidence all through the book of the experience and actual observation of the author; and his chapters on bronchitic asthma, as differentiated from pure spasmodic asthma, contain a good deal of information, and are marked by much common sense reasoning. It is, however, the section on treatment that

* Asthma and Chronic Bronchitis. By John C. Thorowgood, M.D., F.R.C.P. London: Baillière, Tyndall, and Cox. 1894.

will prove most interesting to the average medical reader, not only on account of the large number of drugs and remedies passed in review, but also by reason of the definite opinion stated by the author with regard to their actual value.

A MONOGRAPH ON DISEASES OF THE BREAST.*

THIS work is by a writer who has devoted much time to the study of tumour formation. The result is an extremely interesting book on Diseases of the Breast.

The first four chapters give an account of the development of the mamma and its anomalies; while in Chap. VII. are several tables of the usual kind, as to varieties of tumours, organs affected, etc. These the author has compiled from 13,824 primary neoplasms of all parts, in patients under treatment at the Middlesex, University College, St. Thomas', and St. Bartholomew's Hospitals. We cannot here analyse the figures given, but from them much support can be obtained in favour of the view that "neoplasms are most prone to arise in the sites of greatest post-embryonic developmental activity." As to the genesis of neoplasms, the writer is of opinion that they are the outcome of modified formative processes rather than the result of *ab extra* infection.

At the same time, we think the chapter (VIII.) which deals with "The Present Controversy" as to the causation of cancer might be somewhat fuller, and the case for the opposite side stated more impartially. Again, in the section on "Recurrence," a short table is given embracing 599 cases. It would have been possible to collect a larger number. There is a clear account of "Villous Papilloma," illustrated by several cases; while the difference between such tumours and "duct cancers" proper is clearly given.

Throughout the book copious references are given, and there are several illustrations. We strongly recommend the book as one which contains much useful and interesting information.

* A Monograph on Diseases of the Breast. By W. Roger Williams, F.R.C.S. John Bale and Sons, and Printed by the Author.

PRACTICAL MANUAL OF MENTAL MEDICINE.*

THIS is a very handy work on Mental Diseases, and is, on the whole, well arranged. The subject is one in which French writers excel, and Dr. Regis is no exception to the rule. The clinical descriptions are graphic in many instances, but in some cases are rather "scamped." There is little or nothing on Myxœdema, and the subject of Morbid Anatomy is not up to date. The part devoted to the Medico-legal aspects of Insanity will not, of course, do for English students, but many useful hints are given concerning the management of mental cases.

The work will prove useful as a clinical manual to medical students.

ALPINE CLIMATE FOR CONSUMPTION.†

THE little brochure bearing this title consists of a revised amplification of an article published by the author in the *Lancet*. Sparing the readers many pages of descriptive writing, it deals principally with Davos, Arosa, St. Moritz and Les Avants, as centres, and touches briefly any neighbouring villages which may happen to rank as health resorts. The life at these various places is tersely and accurately described with an admirable restraint and freedom from over colouring. There is a fair amount of information in this book considering its small size and it is just the thing for the busy practitioner who has not time to read the larger treatises on the same subject.

*-Practical Manual of Mental Medicine. By Dr. E. Regis. Authorised Translation by H. M. Bannister, A.M., M.D.

†Alpine Climate for Consumption. By H. J. Hardwicke, M.D. London: J. and A. Churchill. 1894.

PHYSIOLOGY FOR BEGINNERS.*

AN admirable little text-book for beginners has been written by Dr. Shore and supervised by Prof. Foster. It is exactly the kind of book for a medical student commencing his studies; being well written, clear, and abounding in useful diagrams. A capital feature of the book is the introduction here and there of instructions for dissections and experiments which can be done by the student without much cost or inconvenience. We think that this will become a popular text-book with students commencing the study of physiology.

COFFEE.†

THIS small pamphlet is interesting and practical, and might with advantage be read by the majority of housewives. Good coffee is a luxury; but the nauseous decoction which does duty for it in most households is perhaps the nastiest of all modern beverages!

The writer of the pamphlet tells us, amongst other things, how good coffee can be obtained. In the first place, it cannot be purchased for less than 1s. 8d. per pound; and secondly, it must be properly made. For the benefit of our readers we quote the method of "Preparing for Table." "Take an ordinary jug, make it hot, use the coffee liberally (not less than one ounce to the pint), place it in the hot jug, pour on *boiling* water, stir round, and let it stand in a warm place for six or seven minutes, having a covering on the jug; and then pour it off from the grounds into a hot coffeepot, and it is ready for the table."

* Physiology for Beginners. By M. Foster, M.A., M.D., F.R.S., and Lewis E. Shore, M.A., M.D. London: Macmillan and Co. 1894.

† Coffee. By James Lee Lodge. Birmingham, Leicester, and Leamington: The Midland Educational Company Limited 1894.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

MARROL.—We have received from the Liquor Carnis Company a specimen of "*Marrol*," consisting of "ox-bone marrow and hopped malt-extract, plus calcic phosphates and other salts," a preparation to be used as a food, and which consists of an emulsion of bone marrow (yellow and red, it would appear), and which therefore is composed essentially of fat.

Correction.

WE regret that, owing to an oversight, the page-heading over Mr. Taylor's contribution in our last number was incorrectly given as "Cancer of the Vulva." It should have been "Stercoro-vulvaires."

New Books, etc., Received.

An Address on Appendicitis, delivered before the Surgical Section of the College of Physicians of Philadelphia, by J. WILLIAM WHITE, Professor of Clinical Surgery, University of Pennsylvania. Detroit: George S. Davis. 1894.

The Droitwich Brine Baths as Therapeutic Agents in Various Diseases. By W. H. TOMLINS, L.R.C.P. Lond., M.R.C.S. Eng. London: H. K. Lewis. 1895.

Spinal Curvature and Awkward Deportment: their Causes and Prevention in Children. By Dr. GEORGE MUELLER, Professor of Medicine and Orthopædics, Berlin. English edition edited and adapted by Richard Greene, F.R.C.P. Edin. Illustrated. London: The Scientific Press Lim. 1894.

Infant Feeding by Artificial Means: a Scientific and Practical Treatise on the Dietetics of Infancy. By S. H. SADLER. Illustrated. London: The Scientific Press Lim. 1895.

Methods of Operating for Cataract. By Surgeon-Captain G. H. FINK, H.M. Ind. Med. Service. Illustrated. London: J. and A. Churchill. 1894.

The Medical Profession and Freemasonry. Bro. R. F. GOULD, P.G.D. Margate: Keeble's Gazette Office. 1894.

A Hand-book of the Diseases of the Eye and their Treatment. By HENRY R. SWANZY, A.M., M.B., F.R.C.S.I., Surgeon to the National Eye and Ear Infirmary, and Ophthalmic Surgeon to the Adelaide Hospital, Dublin. Illustrated. Edited, under supervision of the author, by Louis Werner, M.B., B.Ch., Assistant-Surgeon to the National Eye and Ear Infirmary, etc. London: H. K. Lewis. 1895.

Notes on Medical Nursing : from the Lectures given to the Probationers at the London Hospital by the late JAMES ANDERSON, M.D., F.R.C.P., Assistant Physician to the London Hospital, etc. Edited by Ethel F. Lamport. Associate of the Sanitary Institute and of the British Inst. of Public Health. With an introductory biographical article by Sir Andrew Clark, Bart. Second edition. London : H. K. Lewis. 1895.

Notes on the Newer Remedies : their Therapeutic Applications and Modes of Administration. By DAVID CERNA, M.D., Ph.D., Demonstrator of Physiology and Lecturer on the History of Medicine in the Medical Department of the University of Texas, etc. Second edition, enlarged and revised. Philadelphia : W. B. Saunders. 1895,

Syllabus of Gynæcology, based on the American Text-book of Gynæcology. By J. W. LONG, M.D., Professor of Gynæcology and Pædiatrics in the Medical College of Virginia, etc. Philadelphia : W. B. Saunders. 1895.

Laboratory Guide for the Bacteriologist. By LANGDON ROTHINGHAM, M.D. V., Assistant in Bacteriology and Veterinary Science, Sheffield Scientific School, Yale University. Illustrated. Philadelphia : W. B. Saunders. 1895.

On the Influence of Clays and Limestones on Medical Geography : Illustrated by the Geographical Distribution of Cancer among Females in England and Wales. By ALFRED HAVILAND.

A Chart for Recording Cases of Diphtheria subjected to the Antitoxin Treatment. By W. JOHNSON HORNE, late House Physician to St. Bartholomew's Hospital. London : Adlard and Son. 1895.

Public Control of Hospitals. By HARRY ROBERTS. The Humanitarian League's Publications, No. 16. London : William Reeves. 1895.

*** Authors can have reprints of articles at the following rates :—

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NOTICE.—All Communications should be addressed to the Printers and Publishers, Messrs. Hall and English, 71, High Street, Birmingham.

THE
BIRMINGHAM MEDICAL REVIEW.
MARCH, 1895.

ORIGINAL COMMUNICATIONS.

ABSTRACT OF A CLINICAL LECTURE ON
PSOAS ABSCESS,

DELIVERED AT THE GENERAL HOSPITAL ON JANUARY 24, 1895,

BY WILLIAM F. HASLAM, F.R.C.S.,
SURGEON TO THE HOSPITAL.

GENTLEMEN,—

I WANT to draw your attention to-day to some cases of abscess involving the psoas muscle that have been under my care during the last eighteen months, as they illustrate some points in the history, symptoms, and treatment of this particular affection. You must of course remember that psoas abscess is not a disease by itself which can be treated without reference to any other part. On the contrary, it is almost invariably due to disease elsewhere, and the muscle merely acts as a convenient channel along which pus, having once gained its interior, may travel; still the signs and symptoms of abscess within the psoas are often so marked, and its treatment is a matter of such importance, that, as a clinical fact, it may be more striking than the actual disease which has caused it. While this is so, however, we must remember that its rational treatment involves a clear knowledge of its cause.

There are many points about the anatomy of the psoas—or rather the ilio-psoas, for the iliacus is essentially part of it—that have to be considered. The psoas at its origin is intimately

associated with the bodies of the lumbar vertebræ, as it arises from the sides of the inter-vertebral cartilages and adjacent surfaces of the vertebræ from the twelfth dorsal to the fifth lumbar; between these attachments it arises from tendinous arches which bridge over the sides of these vertebræ, and it has also an attachment to the lower border and front of the transverse processes of the lumbar vertebræ. From this origin the muscle passes down above the brim of the pelvis and under Poupart's ligament to its insertion into the lesser trochanter of the femur, its tendon receiving part of the fibres of the iliacus on its outer side, the remaining fibres of which muscle pass into a line leading from the lesser trochanter.

From a surgical point of view the origin of the psoas is of more interest than that of the iliacus, as when the ilio psoas is invaded by pus it usually gains access by means of the psoas and not by the iliacus. The interior of the psoas contains the cords of the lumbar plexus, the branches of which leave the muscle in various directions; of these the anterior crural is not only the largest, but that along which pus can most readily make its escape into the thigh. The surface of the muscle is covered by a fascia which is attached externally to the inner border of the crest of the ilium, and internally to the brim of the pelvis. This spreads upwards over the psoas and is attached towards the middle line to the bodies of the lumbar vertebræ and on the outer side to the transverse processes. The upper limit of this fascia as it bridges over the muscle being thickened and known as the ligamentum arcuatum internum.

Before speaking in detail of the cause of psoas abscess, we must bear in mind some few facts that are well illustrated in this condition.

1. That masses of cancellous bone—as, for instance, the bodies of the vertebræ—are liable to be the seat of inflammation, especially of a tubercular nature.

2. That the destruction of bone resulting from this is frequently slow, and though pus is not always formed, it is so in a large proportion of cases.

3. That while on the one hand, under suitable treatment, recovery may take place, on the other hand the inflammatory process may be severe enough to cause the isolation of considerable masses of cancellous bone, and to produce a condition of affairs that amounts to a caries necrotica rather than a true caries, the distinction being, however, one of degree rather than of kind.

4. That where pus is formed as the result of such a condition, its formation is often slow, and is not, as a rule, associated with those constitutional disturbances met with as the result of an acute inflammation. The abscess, therefore, is frequently spoken of as a "cold" abscess.

5. As pus forms, it must escape in some direction, and it naturally does so along the planes of least resistance. Thus it may travel beneath a fascia, or may associate itself with a vessel or nerve, and so make its appearance at a long distance from its seat of origin; or it may find its way into a muscle, and convert its substance into an abscess cavity, as in the case of the psoas.

6. That the abscess, as a rule, tends to increase in size, and will finally burst if left alone.

7. After it has burst or been opened, its cavity may become infected by septic material, and, as a result of this, considerable constitutional disturbance may be set up, producing a condition known as hectic.

The usual cause of pus within the psoas is some disease of the vertebræ. This may be situated in the bodies of the lumbar vertebræ, from the side of which the muscle is actually rising, or pus may travel down from a carious patch in the dorsal region, and enter the psoas by passing underneath the ligamentum arcuatum internum. When once it has entered the muscle, it is merely a matter of time for this to be converted into an abscess cavity.

It is well to bear in mind that the symptoms of spinal caries vary much in their intensity, this variation being due to the exact seat of the lesion. If it be so placed as to be subjected

to pressure in the ordinary movements of the body, then pain will be an early symptom. If in its progress it involves the trunks of the nerves issuing from the spinal column, then, again, pain will be present, and is often of considerable intensity. Angular curvature will be in evidence if the disease is so placed and of such extent as to allow the bodies of the vertebræ to fall together; but obviously there may be ample caries to cause an abscess without there being much pain or any curvature. Of such a condition Case 1 is a good example.

As pus invades the substance of the muscle, it causes a complete destruction of the muscular fibre, so that in time only the thickened sheath is left. The nerves forming the lumbar plexus pass across the cavity and are completely isolated. As the abscess increases in size, it will spread into the iliacus, converting the muscle into an abscess directly continuous with that in the psoas. Owing, however, to the attachment of the fascia over the psoas to the brim of the pelvis, pus will not gravitate into this cavity, so that if further increase takes place, it will pass under Poupart's ligament either along the course of the muscle itself or along the anterior crural nerve. Once in the thigh, its further course is determined by what vessels it associates itself with; whether it will pass underneath the main vessels and present on the inner side of the thigh, or whether it will run down with branches of the external circumflex to the front and outer side of the thigh. At any rate, in such an abscess there will be several definite parts—the long sausage-shaped cavity in the psoas, its lateral diverticulum in the iliacus, the narrow opening under Poupart's ligament, and the portion in the thigh, which at times may be of large size.

The symptoms of the abscess, apart from those actually due to the bone lesion, will be some pain on fully extending the thigh, often, however, of a very trifling nature. If there be an inability to complete this movement, there will be, as a natural consequence, some lordosis. When the abscess has reached an appreciable size, there will be a sense of resistance over the psoas on palpation, with deep fluctuation more or less marked,

Later on, fluctuation may be detected in the iliac fossa or deeply in the lumbar region between the last rib and the iliac crest. Finally, if the thigh be invaded, fluctuation may be obtained between this and the abdominal swelling, and a distinct impulse on coughing will be present which, if the swelling be small and near the femoral canal, may cause it to be mistaken for a hernia.

The treatment of these abscesses has undergone a considerable change since the introduction of the antiseptic treatment of wounds by Sir Joseph Lister. Before then, it was found that when they were opened, the results were most unsatisfactory, for a profuse and chronic suppuration resulted which, in time, wore out the patient's strength. Consequently, the treatment by prolonged rest was much in vogue, and though this method is of little avail in many cases, it must be remembered that there is ample proof that very occasionally these abscesses have disappeared under its influence, for their remains have been found years afterwards in the *post mortem* room.

Withdrawing the contents by means of an aspirator was another way of treatment. Here, again, in a very limited number of cases, success was obtained; but bearing in mind the curdy contents of these abscesses, we see how difficult it must be to empty them by this means.

The most satisfactory method of dealing with these abscesses is to open them in such a way that their cavities may be thoroughly cleaned and the seat of the disease explored, if this be anywhere where access can be obtained to it. If the bone lesion can be reached, it may be possible to remove a sequestrum, or to scrape a carious surface, just as would be done, for instance, if the disease were situated in the os calcis. Mr. Treves advises exploration by a vertical incision between the last rib and the crest of the ilium; then dissecting through the outer edge of the sheath of the erector spinæ, drawing the muscle towards the middle line, cutting through the posterior layer of the sheath and the quadratus lumborum, and so reaching the psoas. In this way the abscess may be opened posteriorly, and

the finger can explore the bodies of some of the lumbar vertebræ, and possibly find the seat of disease. In the two cases where I made an opening in this situation, I did so after having opened the abscess anteriorly; but in neither case could I detect any bare bone. Where the abscess is large, this double opening certainly allows one to clean its interior more effectually than when only a single opening is made. In order to thoroughly clean a large psoas abscess, one must be prepared to spend a good deal of time and to exercise some amount of patience. As soon as the pus has escaped, you alternately irrigate with some hot water and mop out with suitable mops. This process is repeated again and again until you are satisfied that no *débris* is left and that the cavity is dry. I am in the habit of putting a drainage-tube into the cavity through each incision, then passing all the sutures, but not tying them until any exudation that may have occurred is squeezed out through the tubes, which are then removed.

Case 1. R. S., aged 38, a blacksmith, admitted to the General Hospital, January 12th, 1894. He stated that for the last eighteen months he has had pains about the lower part of his back, what he called "rheumatic lumbago," but that he had continued his work as a blacksmith without any great inconvenience. Five weeks ago, whilst shoeing a horse, the animal suddenly pulled up its leg and struck him on his right groin, causing him to fall over. For three weeks after this he had some pain over the seat of injury, but did not notice any swelling; at the end of this time, however, he found there was some swelling in the upper part of the thigh, and he then gave up work and rested at home until his admission into the Hospital.

On admission there was a fluctuating swelling on the front of the right thigh external to the vessels and below the outer half of Poupart's ligament; there was a most marked expansile impulse in this when he coughed. The fulness could be traced under Poupart's ligament and up along the situation of the psoas and for some distance into the iliac fossa. Fluctuation could be

easily elicited between the upper part of the swelling and the part in the thigh. There was but little pain on deep pressure. The movements of the hip were but little interfered with, and there was no marked lordosis. Percussion over the spine did not cause pain, and there was no prominence at any point.

The diagnosis made was that of an abscess within the psoas that had been very slowly forming, probably for many months; that this had made its way into the upper part of the thigh, but was not of sufficient size to be noticed until the kick from the horse caused it to increase. The cause of this was thought to be caries in the body or bodies of the lumbar vertebræ, but not of sufficient extent or in such a position as to cause either great pain or deformity. The so-called "rheumatic lumbago" being due to the disease in the bone.

On January 17th the abscess was opened and its cavity thoroughly cleaned and irrigated. Two incisions were made, one into that part below Poupart's ligament and one parallel and just above it. A large quantity of pus was evacuated together with much membranous-looking *débris* which looked almost like disintegrated omentum. The interior of the abscess was flushed with a large quantity of hot water (no less than eighteen pints being used) and its walls were rubbed with mops of cotton wool so as to remove if possible every particle of tubercular membrane. The part in the thigh was very difficult to clean, as the branches of the external circumflex artery were crossing it in several directions. No bare bone could be felt. The interior of the cavity was then carefully dried and the wound sutured. No drainage tube was used.

The record of the case from this time is briefly as follows:—He had some rise of temperature after the operation, and in the course of a fortnight there was some escape of semi-purulent matter from the lower wound, but there was no evidence of the main part of the cavity being distended. After some suppuration in the thigh, which lasted two or three months, this part of the abscess finally healed and remained quite firm. But while this was consolidating, a sinus formed at the upper incision, and

a probe could be passed in the direction of the psoas. The patient, who had been transferred to the Jaffray Hospital, was re-admitted into the General, in November, with a view to further exploration. At that time there was a very large quantity of discharge from the upper incision, and he was greatly emaciated and evidently fast losing ground. The interior of the psoas was explored by enlarging the sinus, but no bare bone could be detected. A counter-opening was made just above the posterior part of the iliac crest; this gave a satisfactory drainage. His condition, however, was not improved, and he died on December 7th, 1894, worn out with the effects of profuse suppuration. On *post mortem* examination, a sinus was traced from the upper wound for a considerable distance along the psoas, and there was caries of the body of the last lumbar vertebra and the upper surface of the sacrum, the disc having entirely disappeared. There was also a carious patch and an abscess cavity on the anterior surface of the sacrum.

There are several points in this case worthy of note.

1. The fact that for at least eighteen months before his admission this patient had caries in his spinal column; for there can be no doubt that the pain he had in his back was due to this.
2. For a considerable part of this time an abscess must have been forming in his psoas.
3. In spite of this, he was able to continue his work as a blacksmith until within a fortnight of his admission.
4. The contents of the abscess were of such a nature that their removal could only be effected by rubbing and much flushing.
5. The closure of the abdominal part showed the efficiency with which this cleansing had been carried out.
6. The opening of this in its lower part at a later period suggested that there was some undiscovered bone lesion.
7. The permanent closure of that portion of the abscess in the thigh gave further evidence of the good effects of careful cleansing of the interior of such an abscess.

8. The result of the case, with so much bone lesion in a position from which it could not be removed, could not have been otherwise.

Case 2. J. E. G., aged 5, admitted September 10th, 1894, with a history of limping and some pain in the lower part of the back and on freely moving the thigh. There was slight pain on percussion over the lower part of the spine, but no point where this was particularly painful. There was no bony deformity, but some lordosis. In the region of the left psoas there was a fulness and resistance to pressure, but no fluctuation. A box splint was applied, and the child was made an out-patient. Soon, however, there was an increase in the pain in the back, and deep fluctuation was made out over the left psoas.

The patient was re-admitted on November 28th, and on December 5th the abscess was opened. An incision was made parallel to the outer part of Poupart's ligament, and reaching rather above and external to the anterior superior spinous process. The peritoneum was exposed and pushed upwards and inwards from the iliac fossa until the distended psoas came into view; this was then opened, and a large quantity of thin pus evacuated together with shreds of membranous *débris* from the wall of the abscess. The cavity was carefully cleaned and irrigated, and some iodoform put into that part of it near the incision; it was then dried and the wound closed, and dressed with iodoform gauze.

The child seemed very well that night, and, beyond being somewhat sick, there was nothing to cause any anxiety; but at half-past eleven the next morning he became suddenly very ill. He became of a dusky hue, was very restless, his breathing was very much embarrassed, and his pulse could hardly be felt. He died in fifteen minutes from the onset of the attack.

At the *post mortem* examination the cavity of the peritoneum was found perfectly normal. The left psoas was distended with blood and serum, its walls were about one-sixth of an inch in thickness, and the cords of the lumbar plexus were passing across its cavity; there was caries of the body of the fifth

lumbar vertebra, partial destruction of the disc below it, and caries of the upper part of the sacrum. Pus had entered the right psoas, so that this would soon have formed another abscess. A good deal of collapse was found along the posterior borders of both lungs, not very marked in degree, but extending over a large area. The bronchial tubes were healthy, but the pulmonary vessels contained clot, apparently formed *in situ*. The pericardium contained a large amount of serous fluid. The right side of the heart was extensively engorged, the auricle being full of dark clot, and the ventricle clot of a lighter colour. There was a small quantity of red clot in the left side of the heart. The valves were perfectly healthy.

Such a sudden termination to the case was naturally most unexpected and disappointing, and the result of the *post mortem* examination was awaited with much interest. The immediate cause of death was due to an over-distended right heart, this condition being due to two factors—viz., the large area of pulmonary collapse, causing an obstruction to the pulmonary circulation, and the strain on the heart caused by the vomiting after the operation. The presence of a commencing abscess on the right side, and the extent of the bone lesion, were indications that the case was one in which an unfavourable result would have ultimately occurred.

Case 3. A. S., aged 4, admitted October 6, 1893. The history was that of limping and some pain in the lower part of the back on movement.

On examination these facts were confirmed, and in addition we made out some lordosis, pain on pressure over the mid-dorsal region, where there was a slight angular deformity, and a fulness in the region of the ilio-psoas and deep fluctuation over this. On October 11th the abscess was opened by an incision similar to that used in the previous case, and the abscess cavity treated in the same way. A counter opening was however made at the outer border of the erector spinæ between the last rib and the iliac spine. This was done to enable the upper prolongation to be thoroughly cleaned, and was made by cutting on to a

finger introduced from the first incision and made prominent in the required position. The wounds were sutured and no drainage tube used. The patient did well and the dressings were changed in a week and again in six days' time; the wounds healed by primary union. When changing the dressings we noticed what is often seen in these cases, viz., some distension of the abscess cavity. This is due to the exudation of blood and serum, and as a rule is soon absorbed and does not give rise to any trouble. Perfect rest was maintained for eight months by means of a box splint, after which the child was allowed to get about. When last seen a few weeks ago he was very well, but as the mother thought his back was not quite so strong the splint was reapplied.

Case 4. T. H., aged 5, admitted September 11th, 1893. The history being that of pain in the back and limping. On examination we found these symptoms together with pain on pressure over the lower part of the spine, lordosis, no angular curvature, but fulness and fluctuation over the right psoas. September 19th the abscess was opened as in the two previous cases, but it was not necessary to push off the peritoneum as the abscess had approached the surface in the position of the incision. A counter opening was made in the same way, and after careful cleaning and irrigation the wounds were sutured. The wound was dressed on the 28th and was looking well. There was some fulness just above the outer half of Poupart's ligament, and the abscess cavity seems to have filled up. The dressings were changed on October 5th when there was as much swelling as before the operation. By the 16th the swelling had very much subsided, and by November 10th this had almost entirely gone. On the 29th a small collection of fluid was found at the seat of the anterior incision, and on the following day a small quantity of pus was let out from here, and a short sinus with three branches thoroughly scraped. The wound was closed, and it healed without further trouble. The patient is now well, and has no symptoms whatever of any spinal disease.

THE MIDDLEMORE LECTURE.

ON OCULAR AFFECTIONS CAUSED BY BLOWS.

BY HENRY EALES, M.R.C.S.

SURGEON TO THE BIRMINGHAM AND MIDLAND EYE HOSPITAL.

(Continued from page 77.)

I WISH now to deal with the results to the Eyeball itself, of blows received upon it, or its vicinity. These blows for the most part fall directly on the eye antero-posteriorly, or from the outer side, or from below, in consequence of the eye being protected above by the eyebrow and on the inner side by the nose.

Before considering these injuries I wish to draw your attention to the fact that the patient almost invariably sees the blow coming before the impact takes place, and consequently closes the eyes; and I want you particularly to bear in mind that when the eyes are closed not only do the lids fall over the eyes, but the eyes themselves are involuntarily turned upwards at the same time; only by keeping this point in view shall we get an intelligent insight into the peculiar results of these blows upon the eye, and understand why the resulting damage is usually most marked above.

FIG. 1.



FIG. 2.

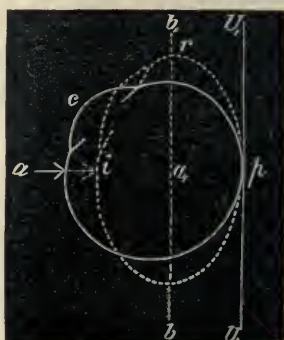


FIG. 1.—CONTUSION OF THE EYEBALL FROM IN FRONT. SCHEMATIC.

The force acts in the direction $a a_1$ upon the centre of the cornea, c . By it the eyeball is pressed against the firm background, $U U_1$, and acquires the flattened form designated by the dotted outline. The greatest expansion of the eyeball occurs in the direction $b b_1$, so that the sclera ruptures at r . The forcing back of the iris by the recession of the aqueous humour is represented as occurring in such a way that at its lower side, u , the iris forms a sac-like protrusion directed backward, while at its upper side, o , it is bent straight back.

FIG. 2.—CONTUSION OF THE EYEBALL FROM BELOW. SCHEMATIC.
(AS WHEN TURNED UPWARDS.)

The force which acts in the direction $a a_1$ strikes the eyeball beneath the cornea and presses it against the background, $U U_1$, so that it assumes the flattened form indicated by the dotted line. The eyeball suffers the greatest expansion in the direction $b b_1$, so that the sclera ruptures at r .*

A reference to the Diagrams will show then, bearing these facts in mind, that the direction of the blow on the eye is not quite antero-posteriorly, but runs in an oblique direction antero-posteriorly from below in front to above posteriorly, $a a_1$, fig. 2.

Now considering the eye as an elastic globe it will be seen that the effect of such a blow is to flatten the eye antero-posteriorly in the direction of the transmitted force $a a_1$; which flattening in this direction is accompanied by a corresponding expansion of the globe in a direction at right angles to this, $b b_1$.

Thus we see that the ocular tunics are most severely strained, and stretched laterally at a point just behind the cornea. This explanation given long ago by Arlt, and recently adopted by Fuchs, best accords with the facts. Now the first effect of applying force to the front of the eye will be obviously to raise the tension in the anterior or aqueous chamber.

Now while the disposition of the iris to the lens offers no obstruction to the normal flow of aqueous fluid forwards from the ciliary processes and vitreous chamber between the lens and the iris into the anterior chamber through the pupil, it is such that any attempt to force the aqueous backwards is at once prevented by the iris acting like a valve, and being applied to the anterior surface of the lens, and so closing this passage. Hence the iris is the first structure to feel the injurious effects of such an injury, and therefore is the one first and most likely to suffer from the blow.

* Fuchs' *Text-book of Ophthalmology*.

You will observe too that while the iris is supported by the lens at the pupillary margin, towards its attached periphery it has no solid support, having merely the aqueous fluid in the posterior part of the anterior chamber between it and the suspensory ligament of the lens, hence it is here that it is mostly forced backwards (see *u* fig. 1).

EFFECTS OF SUCH BLOWS ON THE IRIS.

MYDRIASIS.

You will readily perceive that the first effect on the iris is to cause great and forcible dilatation of the pupil and considerable pushing back of the iris near its ciliary attachment. Hence mydriasis, or dilatation of the pupil, is the commonest result of such injuries, and is caused either from traumatic paralysis of the muscular sphincter or nerve fibres of the iris from stretching, or from extravasation of blood into the iris tissue; or, as has been found to be very common, from some partial rupture of the fibres of the sphincter of the pupil, to which Hirschberg has drawn attention. On examination, we find the pupil moderately dilated, usually somewhat oval in shape (the long diameter of the oval being invariably vertical, because the iris is most dilated above), and frequently some blood in the bottom of the ant. ch. (hyphæma) from extravasation from the blood-vessels of the iris. We also find that atropine is more or less powerless to dilate the pupil further, and eserine to cause contraction, owing to the paralytic condition of the local structures in the iris. Rarely, a distinct radiating rupture of the iris occurs.

TREATMENT.

Rest in bed for a few days is wise, and the application of a cold water compress, to prevent further hæmorrhage; while locally the application of a solution of atropine gr. iv. and cocain gr. viii. ad ʒ i. is comforting to the patient, by the atropine keeping the iris quiet and the cocaine lessening the tendency to hyperæmia and hyperæsthesia. Some object to atropine that it tends to increase the extent of rupture in the sphincter, if present, though I am doubtful if this often occurs to any extent,

It may be thought that eserine applied locally would be preferable, but this drug causes hyperæmia of the intra ocular tissues, the iris specially, and greatly increases the danger therefore of further hæmorrhage into the iris tissue and into the anterior chamber. It is, however, a good plan to substitute eserine drops for the atropine at the end of four or five days, if the eye is quiet and danger of further hæmorrhage seems passed; but this should not be prolonged, or the result may be the formation of adhesions of the iris to the capsule of the lens, as the effects of the prolonged use of eserine is often to cause slight iritis, which so results. Personally, I am inclined to occasionally dilate the pupil with homatropine (every three or four days); if continuing the use of eserine. Homatropine hydrobromate gr. iv., ad $\bar{3}$ i. does well for this purpose, the resulting dilatation passing off in forty eight hours. Eserine S. about gr. $\frac{1}{2}$ or gr. i. ad $\bar{3}$ i. is strong enough, as a rule, to contract the pupil.

PROGNOSIS.

In twenty-four hours to two or three days the hyphæma will be gone, and in a week or two the eye will probably be quiet and vision may be as good as before, this condition scarcely affecting it adversely; but more or less dilatation of the pupil, which often remains oval in shape, very generally persists permanently, especially if there has been rupture of the sphincter of the iris.

IRIDO-DIALYSIS.

Commonly the iris is torn away at its ciliary attachment (irido-dialysis), which is a very common injury. This may be very slight or very extensive, the whole iris having been known to be detached in some cases, and found lying at the bottom of the anterior chamber. Blood is always found in such injury at the bottom of the anterior chamber (hyphæma). In this condition the pupil is flattened and loses its circular shape at the point corresponding to the rupture, which is almost invariably above, where the strain is most felt (*o* fig. 1), and concealed by the upper lid. Vision may be unaffected; diplopia may occur when the eye is not focussed for the object seen.

TREATMENT.

As for the last condition. Here the dilatation of the pupil by atropine may assist somewhat to approximate the edges of the rupture ; but only in one or two cases has such injury been known to be repaired, the deformity so caused being therefore practically invariably permanent.

RETROVERSION OF IRIS.

A somewhat rare injury is a complete retroversion of a part of the iris backwards, where it comes to lie on the ciliary processes and adheres to them. It also is invariably found above, for reason previously explained (*o* fig. 1), and causes a coloboma almost identical with that seen after a large iridectomy upwards. Probably in most of these cases there is also a rupture of the corresponding part of the suspensory ligament of lens.

TREATMENT.

Nothing can be done to restore this retroversion, and it should be treated like the previous injury.

PROGNOSIS.

Such an eye may see well and retain good vision, as in the previous injury ; but probably the accommodation will be more or less lost from accompanying damage to the suspensory ligament.

In many of these cases a chronic inflammation is set up in the ciliary processes, and the iris being more and more dragged up to the ciliary region, the eye is ultimately lost from chronic cyclitis and shrinking of the globe.

SUSPENSORY LIGAMENT.

Next to the iris the suspensory ligament of the lens is most often ruptured, almost always above (*at o* fig. 1).

When this has taken place partially, there is more or less complete loss of power to accommodate the focus of the eye for near objects ; while, in consequence of the lens having lost its support, it becomes tremulous on all movements of the eye,

and this tremulousness is transmitted to the iris, which normally lies in contact with and is supported behind by the lens. When, therefore, we find loss of power to accommodate combined with iridodonesis or tremulous iris, we may infer a partial rupture to the suspensory ligament to have occurred.

In these cases no recovery takes place, and no treatment is of avail beyond giving relief. The same treatment may be employed as before.

N.B.—Occasionally accommodation is lost from traumatic paralysis of the ciliary muscle, and these cases ultimately recover the lost power at the end of three or four weeks or so, so that loss of accommodation without tremulous iris should not lead us to diagnose rupture of the ligament, or to prognose permanent loss of accommodation, and consequently of useful binocular vision.

SUBLUXATION OF LENS.

If the suspensory ligt. is much ruptured, then there will result more or less displacement of the lens, from loss of its support, in a direction opposite to the rupture—that is usually downward,—so that if the pupil is dilated with atropine, the edge of the lens—which appears as a bright ring if seen by direct light, and as a dark band on ophthalmoscopic examination—can be seen to be distinctly displaced from its usual position, and in some cases this may be so marked that the upper edge of the lens is seen in the undilated pupil. Such a condition causes serious damage to vision, for not only is accommodation lost on near objects, but distant vision is indistinct, partly from astigmatism caused by tilting of the lens, and partly from myopia resulting from the lens becoming too convex in consequence of the loss of tension exercised by its suspensory ligament; while, if much displaced, there may be also monocular diplopia added.

PROGNOSIS AND TREATMENT.

Treatment can only be palliative, and may be as before.

In many of these cases the eye is ultimately lost from glau-

coma, caused by the displaced lens pressing the iris forwards, and so closing the angle of the anterior chamber, thus preventing the escape of the intra-ocular fluids, while irritation of ciliary processes, from the lens pressing on them, increases their secretion; or the eye may be lost by recurring cyclitis, set up by constant contact of the lens with the ciliary processes. If glaucoma supervene, iridectomy will be required, and if this fails, the lens should be subsequently removed. If cyclitis sets in, the lens should be removed also; and in these cases I am in favour of a previous iridectomy by a small opening and careful and slow removal of the knife to ensure slow emptying of the anterior chamber, otherwise, the vitreous—being no longer kept in place by the suspensory ligament, it being ruptured—at once comes forward into the anterior chamber and, getting in front of the iris, escapes through the wound, displaces the iris backwards, causing permanent irremediable retroversion of the iris opposite the section; which is averted, however, by a previous *small* iridectomy having been performed.

COMPLETE DISLOCATION OF LENS.

The lens may be completely displaced from its attachments, in which case it usually is driven backwards into the vitreous cavity, and may be seen by the ophthalmoscope or by oblique illumination, lying behind the iris, in the lower part of the eye. In such a case the vision will be seriously impaired from loss of the focal power of the lens, the eye being highly hypermetropic, but good vision may be obtained by a strong convex glass (+ 10 D or more).

The eye may remain quiet, and no further trouble result; but in such cases its use is much impaired, as without a glass vision is very imperfect, while a glass cannot be worn probably, because of the resulting double vision, in consequence of it being almost impossible for such an eye to be combined with its fellow properly to obtain binocular vision, objects appearing much larger with it than by its companion, while also there is absence of all accommodation in such an eye. In most cases

such eyes are lost ultimately, as previously explained, by glaucoma or iridocyclitis. In this position the removal of the lens is even more difficult than in the preceding. In such cases occasionally the lens, which usually becomes opaque, does not interfere with vision while the patient is erect; falls forward into the pupil and obscures vision whenever the patient stoops. Much more rarely the lens when dislocated falls into the anterior chamber, the pupil being dilated, and the iris pushed back by the blow (*o u* fig. 1). When this occurs, glaucoma speedily sets in and the cornea becomes very hazy, and there is great pain in the eye, which becomes very hard.

On examination the lens is easily detected in the anterior chamber, its margins appearing near the periphery of the iris by oblique light as a bright zone, something like that produced by looking at a large oil globule, while the normal striæ of the lens are plainly seen just behind the cornea radiating to the centre.

It is important to note these striæ, for occasionally a similar appearance is produced, which has a spurious though close resemblance to it, by the vitreous, which comes forward into and fills the anterior chamber through a rupture in the suspensory ligament. But in such a condition, while the bright ring similar to that produced by the edge of the lens is caused by the vitreous, no striæ are found; moreover, not only will glaucoma not be present in this condition, but probably the tension will be distinctly minus.

TREATMENT

Once the diagnosis is made of the lens being in the anterior chamber, eserine should be introduced to contract the pupil and prevent the lens falling back into the vitreous, and steps cannot be too soon taken to remove the dislocated lens by operation, otherwise the patient will not only suffer great pain, but the eye will be lost, or damaged permanently by severe glaucoma. Unlike lenses in the vitreous chamber, those in the anterior chamber can generally be more or less easily and satisfactorily removed by operation.

CATARACT.

In some cases the capsule of the lens is ruptured as a result of the blow, usually at the posterior pole. When this happens, the lens speedily (in a few hours) begins to become opaque from imbibition of the vitreous fluid. In such a case atropine and cocaine drops as before should be instilled every four hours or so to keep the pupil dilated, and prevent iritis being set up by the swelling lens, a wet compress used, and the patient kept quiet in bed; and the resulting cataract may be dealt with at the proper time by needling or otherwise, like traumatic cataract from perforating wounds; and such cases often do as well as other cases of traumatic cataract.

It is said that the lens may become cataractous from molecular changes set up by the blow without any actual rupture of the capsule taking place; but, without denying this possibility, I am strongly of opinion that it is infinitely rare, and that practically cataract always means a rupture somewhere. It may be that the rupture is generally not seen owing to opacity of the lens, and being invariably at the posterior pole and often quite peripheral. A reference to the diagram will easily explain why it is the posterior capsule that we should expect to find ruptured from blows, which force the lens backwards.

RUPTURE OF THE SCLERA.

If the blow is sufficiently severe, the sclera itself may be ruptured. A reference to the diagram will explain why it is that this almost invariably takes place upwards (*r* fig. 2), and generally a little inwards, but occasionally somewhat outwards, the place of rupture usually being 2 to 4 m. behind the cornea, and the rupture concentric with it and 4 or 5 m. in extent. But two other reasons may be adduced why the sclera is usually ruptured near the cornea. One is that about here this coat is the thinnest, and another is that it is further weakened here by being perforated at this point by the anterior ciliary arteries. When the sclera is ruptured, the iris is usually prolapsed into the wound, and occasionally the ciliary processes also; while in some cases

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the anterior part of the retina is also found to be prolapsed with the other tissues.

PROGNOSIS AND TREATMENT.

In such a case, the proper treatment is to make a flap of the overlying conjunctiva and expose the wound, and excise the prolapsed iris without delay, and free the wound from all prolapsed tissue if possible. This done, both eyes should be closed, and light pressure made with a pad of Gamgee tissue, and a bandage applied so as to obtain as complete immobility of the eye as possible and promote healing. If, in consequence of the vitreous keeping the wound open, it cannot be properly closed otherwise, a fine silk suture should be inserted in the sclera quite superficially, or in the episcleral tissue, so as to close the wound effectually. If only the iris has prolapsed, the case may do well and a good eye result, with however a coloboma resulting from the excision of the iris. I have seen such cases result with good vision and even perfect accommodation—the ligament of the lens being unruptured. If the ciliary processes prolapse, they should be dealt with in the same way as the iris; and the same would apply to retina or other tissue found in the wound, as no good can result from leaving prolapsed tissue incarcerated in the wound. When the ciliary processes prolapse, the eye is often lost by resulting cyclitis leading to shrinking of the globe, and detached retina; and this is almost certain to result if the retina itself has prolapsed into the wound. If after such an injury the eye remains painful at the end of a week or ten days, and there is a circum-corneal zone of vascular injection persisting, and the eye becomes soft and is tender on pressure over the ciliary region, such an eye should be excised without further delay, as it is just such eyes which are liable to set up sympathetic ophthalmia in the other eye. The same advice would apply if these symptoms persist after the previously described injuries. It should be borne in mind that sympathetic ophthalmia is by far the most commonly met with during the first three to five weeks after injury of its fellow.

EXTRUSION OF THE LENS.

In these cases of rupture of the sclera it is not uncommon for the lens to be extruded through the rupture at *r* fig. 2, and to be found lying under the conjunctiva, when it must be removed while the wound is dealt with as before. Even in this severe injury the eye may recover well, and good vision be obtained by means of a cataract glass.

Fuchs, in his text-book, records the unique case of a farmer in whom this accident took place, first in one eye, and some time subsequently in its fellow, being in each case caused by a blow from a cow's horn; while in each eye good vision was obtained by means of a glass, and maintained. Occasionally the lens is extruded through the conjunctiva also, and may be found lying under the lid, or may have fallen out, but the conjunctiva, being very elastic, is not usually ruptured. Except in this condition the conjunctiva is never ruptured by blows.

The cornea is never practically ruptured as the result of blows; though such a result has been recorded I do not remember to have seen it myself, and should generally expect that there had been a wound, by some means, when this is present.

DAMAGE TO POSTERIOR STRUCTURES.

I now wish to say a few words as to damage to the posterior structures of the eyeball, as it will hardly be supposed that they alone would escape injury. From what I have already said it will be seen that the effect of blows is most severely felt in the anterior part of the globe; and bearing in mind the high vascularity of the choroid and ciliary processes, and even the retina, it will be readily understood that as a result of these injuries it is common for blood to be effused in this region, probably at *a i*, the point of impact, or *r* fig. 2, when it readily permeates the vitreous, and so causes it to become opaque (*hæmophthalmos*) and prevents the posterior structures of the eye from being seen with the ophthalmoscope. Occasionally such effused blood permeates behind the lens and between it and the vitreous, and may be seen there. The

ophthalmoscope often reveals effusion of blood from the anterior part of the eye into the vitreous when nothing more can be made out, therefore in all cases of blows on the eye the ophthalmoscope should be invariably used to ascertain if such a condition is present. If the effusion is not too great, after a few days it sufficiently absorbs to enable the observer to see the posterior structures; when, in addition to hæmorrhagic effusions in the anterior part of the choroid, it is often found that the structures at the posterior part of the fundus are damaged also.

The commonest injury seen is rupture of the choroid, generally at the posterior pole (*p* fig. 2), opposite the point of impact, above the disc and concentric with it; there may be one or more such ruptures. That the retina is not also ruptured is shown by the vessels of the retina passing over the rupture, and that this is most commonly the case shows that the choroid is more easily damaged than the retina. In such cases there will probably be a blind area in the F. V. corresponding to the rupture, and if this extends to the macula direct vision will be damaged, because the percipient layer of retina lies on the choroid and is sure to be damaged also. In some cases the retina is also found to be ruptured.

Occasionally though no rupture is seen immediately after the injury, some five weeks later large areas of the choroid may be found to be undergoing atrophy as the result of bruising of the choroid, with accompanying failure of vision in the areas of the F. V. corresponding with the seat of injury.

TREATMENT.

In all these cases dark glasses should be worn for some weeks, and it may be well to instil atropine to keep the ciliary muscle inactive, because in action it pulls on the choroid. Rest from use of the eyes should be enjoined, and it is wise to keep the patient in bed for a week or ten days with both eyes bandaged, and a wet compress to lessen the tendency to intra-ocular hæmorrhage, especially if there is rupture of the retina, which there may easily be at the periphery where it cannot be made out, as such

cases are apt after a time to be found to have detachment of the retina. It is most important therefore to give the initial rupture every chance of healing to prevent further intra-ocular hæmorrhage.

My experience convinces me that such injuries are very commonly the cause of subsequent detachment of the retina, in many cases of which I have been able to find no other cause than a history of a previous blow, at the time not much regarded; and as this deplorable condition is hardly amenable to any kind of treatment and generally ultimately ends in blindness by the retina becoming more and more detached till completely separated, it is most important, if possible, to prevent its commencement in the early stage of injury.

I would specially point out that floating *muscæ*, after injuries, almost surely indicate an intra-ocular lesion; while the persistent complaint by the patient of flashes of light, or coloured areas, indicating, as they do, irritation of the retina, should always be seriously regarded as indications of possible grave injury. The fact that letters looked at appear distorted or twisted, and do not appear to be in line, is very suggestive of detached retina being present; while loss of perception over a large part of the F.V. is practically diagnostic of this having occurred; and such a loss is most often found above because detachment is most common below, in consequence of the fluid collecting there by gravity. The ophthalmoscope at once reveals the lesion.

It is supposed that the detachment in these cases is caused by a rupture in the retina not healing, allowing the fluids of the vitreous—which body normally supports the retina—to filtrate between it and the choroid, and this condition, once started, almost invariably, it may be slowly, progresses. Usually this is only found in one eye; but I have a case in my experience unique, in which both *retinæ* are detached by blows, but as there is a history of several blows, probably not by the same injury.

A specimen of an eye recently excised by me, in consequence

of its immediate and complete destruction as an organ of vision by a blow, I now hand round, as it shows well how severely such an injury may affect the eye, if the force is great, without causing rupture of the sclera. You all see that the lens is dislocated and has actually passed through the choroid, lying between it and the sclera; the retina is completely detached from the choroid by hæmorrhage, probably from the latter; while the choroid is also detached from the sclera by hæmorrhage. Detachment of the choroid from the sclera is only *very* exceptionally diagnosed by the ophthalmoscope, because usually, as in this case, the retina is at the same time detached from the choroid, and therefore all evidence of it is incapable of being observed.

Before closing, I would say that even after slight blows on the eye there is more or less temporary obscuration of vision, lasting, it may be, only a few moments, but in some cases persisting longer, but unaccompanied by any visible changes seen by the ophthalmoscope. In such cases a perimeter shows that there is contraction of the F.V. This condition is called traumatic anæsthesia of the retina, and usually in a few days recovers; though very rarely some permanent depreciation of vision persists. In some such cases what has been called commotio retinæ or traumatic edœma of retina is seen with the ophthalmoscope, the retina appearing somewhat hazy around the disc and macula for a few days; but this soon passes off, and good vision returns. In such cases dark glasses should be worn, and rest enjoined for three or four weeks.

In conclusion, I wish to say that my thanks are due to my colleagues, Mr. Owen and Mr. White, for permission to show cases and for loan of diagrams, and to our House Surgeons, Mr. Sinclair and Mr. Henry, for much valuable assistance in preparing diagrams, etc., etc. No one is more conscious than myself of the very imperfect manner in which I have placed the subject before you, partly owing to being unaccustomed to the arts of either lecturing or teaching in a hospital like this, where no such demand is made upon us, and partly because I

wished to cover, as far as possible, the whole ground of the results of blows, and so have been compelled of necessity to deal very shortly with many matters well worthy of a more extensive treatment; but if I have done anything to increase your interest in our speciality, or added in even a small degree to your appreciation of the dangers resulting from blows on the eye, I shall feel well repaid for any labour entailed in the delivery of this lecture.

ON CRANIOTOMY.*

BY C. E. PURSLOW, M.D. LOND., M.R.C.P. LOND.

HONORARY OBSTETRIC OFFICER, QUEEN'S HOSPITAL;
ASSISTANT TO THE CHAIRS OF MIDWIFERY AND GYNÆCOLOGY,
MASON COLLEGE, BIRMINGHAM:
HONORARY MEDICAL OFFICER, BIRMINGHAM LYING-IN CHARITY.

GENTLEMEN,—

This operation, which consists of opening the cavity of the foetal head, evacuating its contents, and subsequently extracting it through the maternal passages, is one of the oldest in the history of our art.

It is mentioned by both Hippocrates and Celsus and by other Greek and Latin authors, also by the Arabian physicians; indeed, before the introduction of forceps it was almost the sole resort of the obstetrician in cases of difficult labour due to obstruction to the passage of the head, and the use of the word “embryulcia,” as synonymous with craniotomy, shows this, the literal meaning of embryulcia being extraction of the foetus, and not mutilation.

We will firstly consider the conditions which necessitate the performance of craniotomy. I will enumerate those mentioned

* Paper read before the Queen's College Medical Society, December 12th, 1894.

by Galabin in his text-book of midwifery, which may be looked upon as a standard authority. These are :—

Great disproportion between the head and the pelvis, obstruction caused by tumours, or by cancer of the cervix. In rare cases, obstruction due to rigidity of the cervix, inflammatory deposits, or cicatrices. Dangerous conditions of the mother, as eclampsia, calling for rapid delivery, when forceps or version is not sufficient to meet the case.

Now the range of the operation depends very largely upon whether the child is living or dead. If the child is already dead, then the operation may be performed whenever the delivery would be rendered easier and the mother's recovery more certain by doing it. If, on the other hand, the child be living, the range of the operation becomes very limited, and with very rare exceptions it should, in my opinion, only be performed in certain cases of contracted pelvis. In suitable cases the mother's life may be saved, almost with certainty, by this operation ; whereas, by the only possible alternative, it may be very seriously imperilled ; and, in my opinion, the interests of the mother are paramount.

The condition which necessitates craniotomy with a living child is one of contracted pelvis, when turning and forceps are both of no avail, and when the amount of contraction is not so great as to render craniotomy a dangerous operation, and one whose mortality would approach that of Cæsarean section.

Such pelves may be said to have a lower limit with a conjugate of about $2\frac{1}{4}$ inches, but in an upward direction it is not possible to fix a limit, as it not infrequently happens that craniotomy may be necessary in a woman who has previously had a living child, the amount of diminution of the conjugate being small, but the difficulty arising from an unusually large and well-ossified head ; thus, the former child may have been a female, the present one a male, or the difficulty may arise from an unusual position of the head which cannot be remedied.

As regards the other conditions which have been mentioned, it appears to me that it can never be justifiable to craniotomise

a living child in a case of cancer of the cervix, as this is a disease which will inevitably prove fatal to the mother in a comparatively short time, and in consequence the child's life assumes a relatively greater importance.

When we come to consider the objections raised against craniotomy, we find that no operation has been more vehemently objected to; and here we leave the domain of surgery and trench upon that of religion and morals.

No one can deny that craniotomy has been performed with unnecessary frequency in the past. Thus, according to Playfair, during the mastership of Dr. Labbat at the Rotunda the forceps was never once applied in 21,867 labours; and though he does not mention the number of cases in which craniotomy was performed, it must have been very large. Later, in the years 1840 to 1847, the percentage of craniotomy cases was '79.

Recent statistics show a much less percentage than this. Thus, in the Guy's Hospital charity in the years 1863 to 1875 the percentage was only '07, though this is probably below the general average.

Other obstetricians have gone to the opposite extreme, and some have gone so far as to assert that craniotomy should never be performed on the living child. There is no doubt in my mind that to accept this dictum would involve the loss of many valuable maternal lives, and although the adoption of aseptic principles in abdominal surgery has much reduced the mortality of Cæsarean section and restricted the limits of craniotomy, still there are cases in which the latter operation will be the most eligible, and it is necessary to study the best means of performing it with success.

I think the most sensible view taken of the question is that of Spiegelberg, and I may be pardoned for quoting from him:—

“Some leading accoucheurs have declared that perforation should never be employed where a child was obviously alive, a principle which the majority of French and German accoucheurs accepted on the ground of æsthetics and humanity, though the latter is only apparent. The more practical English obstetricians

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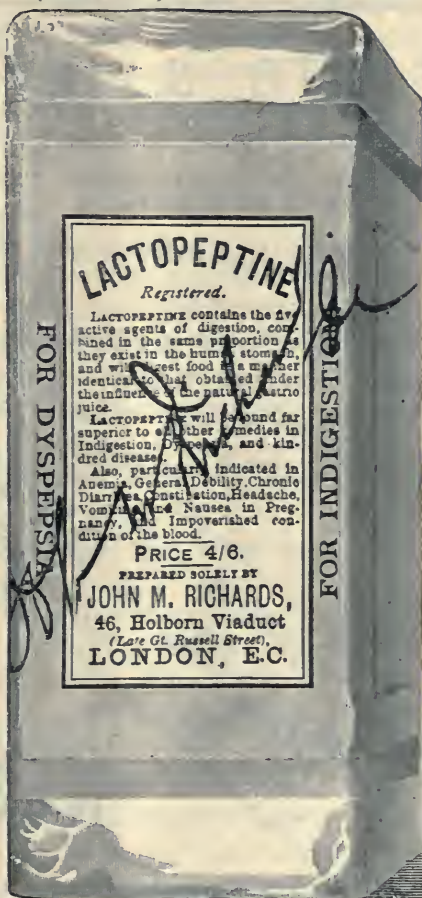
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never went to this length, they held fast to the principle that the child must always be sacrificed where the question lies between its life or that of its mother ; and this is the stand-point which is accepted to day ; perforation of a living or of a dead child is a justifiable measure when necessary."

In Roman Catholic countries practice has been influenced by the dictum of that Church, that it is not lawful to destroy the child in order to save the life of the mother.

The alternative operations may be said to be Cæsarean section (including Porro's operation), symphysiotomy, induction of premature labour. The use of forceps and version will not be considered here, as it is taken for granted that one or both of these measures will have been tried, if they appear at all likely to be successful, before proceeding to craniotomy. The main issue is, when the child is living, craniotomy *versus* Cæsarean section.

The discussion of this matter might easily occupy a whole paper, but I will, on the present occasion, content myself with stating my own views. These are that, when the fact that such an amount of pelvic contraction exists as will preclude the possibility of delivery of a living child at term is known before labour commences, then—the consent of the patient and her husband having been obtained—arrangements may be made to perform Cæsarean section at the most favourable opportunity. This is generally considered to be as soon as labour pains commence. If, on the other hand, the woman has been some hours in labour, and attempts have been made to deliver by forceps or version, then I am quite convinced that craniotomy offers very much the most favourable prospect for the mother, and is the operation to be performed, provided that the amount of pelvic contraction is not so great as to render delivery after perforation a very difficult and dangerous proceeding.

In the first class of case, where the pelvic contraction is known to exist in the earlier months of pregnancy, the induction of premature labour may be considered, and is probably the best method to adopt.

Symphysiotomy is an operation which was practised in the last century. It then fell into oblivion, but has lately been revived. I have no personal experience of this operation, but, according to the medical papers, it is not free from subsequent complications. In some cases incontinence of urine has resulted from tearing of urethra or bladder, and in others difficulty of locomotion from failure of the bones to unite again properly. The application of this operation should be strictly limited to cases in which a slight increase of the conjugate (not more than an inch) will be sufficient to allow the extraction of the head by the forceps. If it be done in cases having a greater pelvic contraction than this, the results are sure to be disastrous.

When once craniotomy has been decided upon, to wait for the death of the child before commencing the operation is absurd—it greatly increases the risk to the mother, and has nothing to recommend it except misplaced sentiment.

In looking up my notes, I find that I have performed craniotomy four times. In two of the cases the child was unmistakably dead, the cord being prolapsed and pulseless; in the other two, although no foetal movements were felt, there was no such undoubted evidence of the death of the child, and we will take it for granted that in these two cases the child was alive. Three of these cases occurred in the maternity department of the Queen's Hospital, and one was a Lying-in charity case.

I have under my charge, in connection with these two appointments, an average of 500 cases of midwifery per annum, and these are all the cases of craniotomy performed during the past five years. Thus there have been only two cases of craniotomy on living children in 2,500 cases, or '08 per cent. This proportion will, I think, be found as low as in any recorded statistics. In each case the mothers made an uninterrupted recovery.

I have never performed craniotomy in private practice, though I have on more than one occasion regretted that I had not done so when I have delivered, after using very great effort, with forceps; and although the patients in each of these cases

have recovered, yet the convalescence has been retarded, and some pyrexia has followed from the severe contusions to which the soft parts have been subjected.

I have on more than one occasion been sent for to perform craniotomy, but have succeeded in delivering with forceps. I will now give notes of the cases:—

The first occurred on January 11th, 1891. The patient had had three children previously, all premature, dead, and the forceps having to be applied in each case.

When first seen the patient had been in labour twenty-four hours, the waters had broken ten hours. Dr. Snell, Obstetric House Surgeon, was called, and endeavoured to deliver with forceps; this failing, he performed version with no more success. The feet of the child were protruding and the cord was pulseless, but the head could not be made to engage in the pelvis, and marked narrowing of the brim could be felt. The head was perforated behind the ear, and after evacuating the brain very great difficulty was found in delivering the head; this was ultimately effected by hooking the crotchet into the foramen magnum, and making strong traction on that and on the feet at the same time. Patient was of typically rickety appearance, having prominent forehead and bowed tibie.

Dr. Snell and myself both made measurements of the pelvis, and each deduced the diagonal conjugate at $3\frac{1}{6}$ inches, which would give a true conjugate of not more than $2\frac{1}{2}$ inches. Patient made a rapid recovery.

I directed the patient, if ever she should become pregnant again, to present herself at the Hospital with a view to admitting her and inducing labour, or, if she had gone too far for that, performing Cæsarean section, but I have never seen her again.

Case 2 occurred in the Lying-in charity practice. The previous history of this case is interesting:—She had had eight children. At the first confinement, thirteen years ago, she was attended by a midwife. She was in labour three days, and shortly afterwards a vesico-vaginal fistula formed. She had undergone an operation for this at the Women's Hospital, but

it had proved unsuccessful, and she had suffered from complete incontinence of urine during the whole of this time. Of the eight children four had been born alive, of whom two only—and these females—survived. On the other four occasions she had chloroform and forceps, and the children were stillborn.

When I saw her she had been eight hours in labour, and the os had been fully dilated two hours. On examination, there was a vesico-vaginal fistula admitting index finger. Distinct projection of the sacral promontory and narrowing of the conjugate could be felt, and the head, which was well ossified, could be felt free above the brim. Patient being placed under chloroform, I applied the long forceps and used strong traction, but with no result. I then perforated and evacuated the skull. I applied Simpson's cranioclast, but it slipped off. I then applied ordinary forceps, and with some little difficulty delivered the head. Some difficulty was experienced in delivering the body. The child was a male and well developed.

Case 3 occurred on February 5th, 1893, in the Queen's Hospital maternity. Patient had had two children previously, the first small, male, born without assistance; at the second I was called in by the practitioner who was attending, and delivered with difficulty by the forceps. On the present occasion she had been in labour thirty-six hours, water had probably been ruptured twelve hours. Mr. A. R. Green, Obstetric House Surgeon, was sent for, and applied forceps without avail.

On examination, distinct narrowing of brim could be felt, and head could be felt free above brim, and could not be made to enter it with forceps. Head perforated, attempt made to deliver by Simpson's cranioclast. This did not hold the skull firmly and slipped off, and the cephalotribe was then applied and delivery easily effected. Child male, well developed.

Case 4. Queen's Hospital case. Seen August 25th, 1893, 9 a.m. Patient had had eight children. She stated that "child had had to be killed on four previous occasions" She was seen by Mr. Orton, Obstetric House Surgeon, at 7 a.m.; the cord was then prolapsed and pulseless, and the head could be felt above the brim. Forceps were tried, but without avail.

On examination, distinct narrowing of pelvis could be felt, conjugate being estimated at not more than $3\frac{1}{4}$ inches. The head could be felt above the brim, not engaged, and a distinct dent could be felt in the parietal bone opposite the sacral promontory.

After perforation and evacuation the child was delivered with ordinary forceps, and proved to be a male.

As regards the methods of performing the operation, full instructions are laid down in the text-books; but there are one or two points to which I should like to draw attention. Firstly, the choice of a perforator. There are two instruments commonly in use—Simpson's and Oldham's; and I think anyone who has had experience of both will unhesitatingly give the preference to Oldham's. It affords a much firmer hold to the hand, and can be easily manipulated and the blades separated by one hand, whereas Simpson's requires the other hand, or assistance from a bystander, to press back the catch before it can be opened. I would especially impress upon you the extreme importance of the rule that the fingers of the left hand should never be removed from the blades of the perforator, so as to guard it during the whole process.

Perforation of the after-coming head as usually performed, behind the ear, is a difficult proceeding, as, in the first place, it is impossible to place the point of the perforator at any other than an acute angle to the surface of the bone to be perforated, and consequently it is very apt to slip; and secondly, the bone at the spot chosen, which is usually the mastoid process of the temporal, is much thicker than the vault of the skull. In any subsequent case I should be disposed to perforate in the alternative site—viz., the roof of the mouth.

I think all authorities are now agreed that it is better to proceed at once to extraction of the head after perforation. The older writers advised that after perforation the case should be left to nature for as long even as 24 or 36 hours.

I have never found it necessary to wash away the brain substance with a syringe, and think that if care be taken to make a

good hole and to break up the brain with the perforator or the finger, that will be sufficient.

As regards the numerous methods which may be adopted for extraction of the perforated head, I would at once exclude turning, as offering no distinct advantage, and being dangerous because of the possibility of injury to the uterine wall of the broken edges of bone. In cases of moderate contraction of the pelvis, the ordinary long forceps will be found to answer very well ; but if they are used, the left hand should carefully examine, as traction is being made, to see that they are not slipping off, and to guard the edges of the bone around the perforation. Craniotomy forceps will answer very well if care be taken to get a good hold of the skull, preferably of the occipital bone. I have found that Simpson's cranioclast with separate blades does not so firmly hold the skull as the ordinary craniotomy forceps.

I should be loth to resort to the method of removing the vault of the skull piecemeal by craniotomy forceps in cases where the amount of pelvic contraction was considerable, and should much prefer to use the cephalotribe if I could not deliver by either of the methods I have mentioned.

The crotchett is not a good instrument for ordinary cases, as it is liable to slip and injure the mother or the operator ; but if used, the left hand should be applied to the outside of the skull, opposite to the spot at which the crotchett is applied in the interior.

In the case of extraction of the after-coming head after perforation, I found the crotchett extremely useful ; and it is also a good instrument for extracting the separated head after decapitation.

SOME REMARKS CONCERNING TRACHEOTOMY ON CHILDREN.

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TRACHEOTOMY on children differs so much from the same operation performed upon adults, not only as regards its results, but also as regards the ease of its performance and the conditions calling for it, that I have thought it desirable to practically limit my present remarks to those cases, in which the operation was done upon children under 12 years of age. From May, 1893, to October, 1894, during which time I was Resident Surgical Officer, tracheotomy was performed at the General Hospital upon children under 12 years of age twenty-five times. In the great majority of cases I did the operation myself, while in the remainder it was done under my immediate supervision. I append a table giving some of the more important details of each case.

	Age of Patient.	Disease.	Date of Operation.	Tube left out.	Result.
1	8 months	Membranous Croup	Oct. 11, 1893	—	Died Oct. 22
2	1 year	"	Nov. 16, 1893	—	" Nov. 18
3	14 months	"	Aug. 8, 1894	—	" Aug. 8
4	19 "	"	Sept. 2, 1894	—	" Sept. 2
5	2 years	Scald of Larynx	Mar. 6, 1894	Mar. 19	Cure
6	2 "	Membranous Croup	Aug. 30, 1893	—	Died Sept. 1
7	2 "	"	Apr. 26, 1894	—	" May 3
8	2 "	"	Jan. 8, 1894	—	" Jan. 9
9	2½ "	Scald of Larynx	Oct. 6, 1893	Oct. 10	Cure
10	3 "	Membranous Croup	Oct. 10, 1894	Oct. 14	"
11	3 "	"	Jan. 15, 1894	—	Died Jan. 16

	Age of Patient.	Disease.	Date of Operation.	Tube left out.	Result.
12	3 "	"	July 2, 1893	July 14	Cure
13	3 "	"	Jan. 2, 1894	Mar. 5	"
14	3 "	"	Dec. 9, 1893	Feb. 4, '94	"
15	3½ "	Diphtheria	Sep. 22, 1894	Oct. 19	"
16	4 "	Membranous Croup	Jan. 22, 1894	Feb. 9	"
17	4 "	Diphtheria	Feb. 13, 1894	—	Died Feb. 15
18	5 "	"	Mar. 28, 1894	—	" Mar. 28
19	5 "	"	Feb. 16, 1894	Feb. 28	Cure
20	6 "	Membranous Croup	Jan. 18, 1894	Feb. 1	"
21	6 "	"	Mar. 3, 1894	Mar. 12	"
22	6 "	"	May 9, 1894	May 16	"
23	7 "	"	Feb. 15, 1894	Feb. 20	"
24	9 "	Catarrhal Laryngitis	Jan. 17, 1894	Feb. 2	"
25	10 "	" occurring during typhoid.	July 10, 1894		Tube still in

From this table it will be seen that of the 25 cases 14 were cured, 10 died, and 1 still has the tube in. Excluding, for the moment, this last-mentioned case, we find that fourteen patients were cured and that ten died, which gives 58·3 per cent. of recoveries. But this number contains two cases of scald of larynx and one of laryngitis, in which no membrane was seen, and which is consequently put down in the table under the heading of "catarrhal laryngitis." It is a well-known fact that neither of these last conditions is nearly so fatal as membranous croup, which is by far the most common condition calling for tracheotomy in children. Subtracting, therefore, these three cases, it appears that, out of twenty-one children under 12 years of age operated on for membranous croup or diphtheria, eleven, or 52·3 per cent., recovered. Of eight patients 2 years of age or under, only one recovered; and this one was suffering not from membranous croup, but from a scald of the larynx. But if children of more than 2 years of age are taken as a separate class, the results are very different; for out of sixteen cases operated on, thirteen were cured, giving 81·2 per

cent of recoveries. Again, taking only cases of membranous croup or diphtheria in children of more than 2 years of age, we find that fourteen cases were operated on, and that of these eleven were cured, giving 78·5 per cent. of recoveries.

Comparing these with other statistics, I find that Sir George Buchanan operated for membranous croup in fifty cases, of which nineteen were cured, giving 38 per cent. of recoveries,* and that Mr. Howard Marsh operated on fifty cases with eight recoveries, or 16 per cent.† The most complete statistics that I have been able to find are those of Fischer, of Hanover, and they seem so important that I venture to give them with some fulness.‡

From January, 1884, to September, 1893, there were admitted into the hospital at Hanover 1,510 cases of diphtheria, and upon 1,000 of these tracheotomy was performed. No distinction is made between diphtheria and membranous croup, and in all cases the high operation was performed, the condition calling for it being urgent dyspnœa, without reference to age or complications. In 1885, when there was no epidemic of diphtheria or scarlet fever, there were 48 per cent. of recoveries. In 1886 and 1887 there was a severe epidemic of scarlet fever and the recoveries fell to 27 per cent. In 1888 and 1889, when there was an epidemic of diphtheria, the recoveries were 30 and 31 per cent. respectively. When this epidemic died away, the recoveries rose to 39 per cent.

Taking all these cases together without regard to the prevalence of an epidemic, the results show 37 per cent. of recoveries. But eliminating the four years of epidemic and regarding the remaining six years as the normal condition of affairs, Fischer gives 605 operations with 249 recoveries = 41 per cent.

The same author mentions 4,493 cases of tracheotomy for diphtheria occurring in the practice of other German surgeons, with 30·4 per cent. of recoveries. Of these last figures, however, no details are given.

* Transactions International Medical Congress, 1881, vol. iv., p. 207.

† St. Bartholomew's Hospital Reports for 1867, p. 231.

‡ Deutsche Zeitschrift für Chirurgie, Nov., 1894.

These figures of Fischer's show in a remarkable manner the dependence of the results of tracheotomy for diphtheria upon the type of the disease, proving, as they do, the very greatly increased mortality when there is an epidemic of scarlet fever or diphtheria existing at the time. But there are, in my opinion, two other main conditions, apart from the age of the patient, upon which the results of the operation for diphtheria depend. They are—

1. The existence or not of pneumonia.
2. The extent to which the symptoms of asphyxia have been allowed to progress.

As regards the first of these, I should say that when there are urgent symptoms of laryngeal obstruction in a case of diphtheria or membranous croup, even though pneumonia be present, tracheotomy should be performed. If the patient be left without operation, death is practically certain to take place; while, if the trachea be opened, there is some chance of the pneumonia resolving, the obstruction having been relieved.

As regards the second of the above conditions, I hold that tracheotomy should be performed early, and consider that the following are quite sufficient indications for operation :—

1. Well marked retraction, both costal and episternal.
2. The fact that the symptoms are increasing in severity, despite efficient medical treatment.

At this stage the patient is flushed, is restless and struggles for breath. There is little or no cyanosis, and the heart is acting well. Now is the time for tracheotomy, if there is no improvement under medical treatment. Unfortunately cases are very often sent up to hospital at a much later stage than this, when the patient is lying quite quiet, semi-conscious, and cyanosed, with a failing heart and engorged lungs. It is such cases as these which to a large extent account for the high death-rate following operation; but I would not hesitate to operate in all such cases, and my opinion is strengthened by the result obtained in case No. 14 in my list. This patient was a little girl, aged 3 years, who was brought to Hospital apparently in

the last stage of asphyxia from membranous croup, and who was so far gone, that an opinion was expressed that no operation should be done, as the case seemed quite hopeless. However I opened the trachea, had to do artificial respiration for a time, and the child recovered.

It is a point often disputed, as to whether chloroform should be given to these patients or not. For my own part, I act on the rule that, when the patient is restless and struggling, the operator is aided by anæsthesia and the patient is benefited by the relaxation of laryngeal spasm. On the contrary, when the child is cyanosed, quiet, and semi-conscious, chloroform is dangerous and is not indicated, for there is little or no struggling produced by the operation, even without an anæsthetic.

At the present day, now that such methods as operation by the trocar and canula and by the galvanic cautery have been, and I hope finally, put aside, but little remains to be said as to the exact method of performing tracheotomy ; but still there are a few points to which attention may be called :—

1. The treatment of the thyroid isthmus. The rule generally laid down is that the isthmus should be drawn down, the deep cervical fascia should be nicked transversely and the trachea opened above the isthmus. This is easily done in adults and older children, but, in a young child with a short fat neck, I never hesitate to completely divide the thyroid isthmus down the centre. As a rule the bleeding is slight, but, if it should be at all severe, it is the work of a moment to catch up each end of the divided isthmus with a pair of Spencer Wells forceps. This method is more rapid, more easy, and gives a much better exposure of the trachea than the method of pulling down the isthmus.

2. If practicable, the trachea should not be opened till bleeding has ceased. But there is not always time to wait for this and, if such be the case, the trachea should be found by touch and opened at once. When this has been done all bleeding immediately ceases, and I have never seen any harm

result from the entrance into the trachea of the small amount of blood which is in the wound at the time the trachea is opened.

3. A bi-valve silver tube with a movable shield and of as large a size as possible should be used. The movable shield makes the tube fit better and lessens the tendency to ulceration of the tracheal mucous membrane from the pressure of the end of the tube. As I have said, a large tube should be used ; for though with a smaller sized one the child may have no retraction and be of a good colour, yet the expansion of the chest is not sufficiently free to get rid of the engorgement of the lungs. Anyone who has noticed how partial the patient's relief is when a small tube is put in at the time of operation, and how complete it is when a larger one is substituted will, I think, agree with this.

4. The pre-tracheal fascia should be cut cleanly through, and the operator should be careful not to strip it up from the trachea. Dr. Wilks* mentions three cases of fatal emphysema of the mediastinum following tracheotomy, the air having apparently made its way down beneath the pre-trachial fascia. I have myself seen a case of a man, aged about 50, upon whom tracheotomy was performed for oedematous laryngitis and who died suddenly four hours afterwards, there being found, *post mortem*, emphysema of the mediastinum with left pneumothorax.

After operation, the patient should be put in a tent near the fire ; but I am not in favour of the use of the steam-kettle. An atmosphere laden with moisture is debilitating, and, for my own part, I have rarely seen a case in which the use of steam has benefited the patient. A full amount of liquid food should be given by the mouth, unless fluids are returned through the tracheotomy tube, in which case—and also occasionally when the pharynx is scalded—the nasal tube should be used. In some cases the presence of a silver tube in the trachea causes great irritation, and, this being so, the advice is often given that a soft rubber tube should be substituted. This certainly causes less irritation ; but it has two great disadvantages—1. The

* Guy's Hospital Reports, 1860, p. 135.

edges of the wound, in a long-standing case, are very apt to contract, so that, after a time, a smaller tube has to be put in. This happened in Case No. 25 in my list, the wound having to be forcibly dilated and a silver tube re-inserted. 2. A tracheotomy tube is always liable to become plugged with a pellet of mucus or a piece of membrane. This does not matter when a double silver tube is used, as the nurse can at once take out the inner tube; but in the case of a rubber tube this is a real danger, and the nurse should be instructed, should a sudden blockage of the tube occur, to cut the tapes, take out the tube, and insert a pair of dilators into the wound. Such a plugging of the tube occurred in Case No. 14, and the necessary measures were taken only just in time.

At the end of a week, or in some cases before, an attempt should be made to leave out the tube. This should be done gradually, so that the child should become accustomed to breathe through the larynx again. In my fourteen cases of recovery the average time for the tube to be in was 18·5 days, the shortest time being 4 days and the longest 61. But whatever care is taken to try and make the child breathe through the larynx, cases will sometimes occur in which the tube has to be worn for months or even permanently. The chief obstacles to the restoration of natural respiration are—

1. Fright.
2. Presence of granulations about the wound.
3. Stenosis of larynx.
4. Impairment of function of laryngeal muscles.
5. Attacks of œdematous or catarrhal laryngitis.
6. Intercurrent diseases.

To consider each of these in turn :—

Fright.—For the first few minutes after removal of the tube, breathing is carried on through the tracheal wound; but directly the edges of the wound begin to come together during inspiration, the child feels the slight obstruction to respiration and becomes frightened. A spasm of the constrictor muscles of the larynx occurs, and the tube has to be replaced. This may

occur time after time, and is best overcome as follows :—Use a tube with an opening on the convexity, and at intervals plug the mouth of the tube for some minutes at a time. This compels the patient to breathe through the larynx without noticing, and generally succeeds.

Granulations may form in a mass at the junction of the trachea and larynx, or round the trachea on a level with the wound. The treatment should be—

1. Preventive: (*a*) Use a well-fitting tube with a movable shield. (*b*) Leave out the tube as soon as possible.
2. Curative: Touch the granulations with silver nitrate. If a mass of granulations has formed at the junction of the trachea and larynx, intubate from the mouth, or pass a flexible tube from the wound up through the rima glottidis.

Mr. R. W. Parker* quotes a case of death from asphyxia fifteen days after removal of the tube. *Post mortem* there was found a mass of granulations on the tracheal aspect of the wound, the external part of the wound having healed. He gives as the symptoms of this condition dyspnœa, especially at night, coming on when the wound has apparently healed. No. 15 in my list I look upon as a case of this nature, for the child developed severe nocturnal dyspnœa fourteen days after the tube had been left out, and when the wound had apparently healed. For three nights dyspnœa was so marked that it looked as though the trachea would have to be re-opened; but this was not the case, and in a fortnight's time the breathing was quite normal again.

Stenosis of Larynx.—This may vary from a partial adhesion of the cords to complete blocking of the larynx from a cicatricial mass. In the former cases it may be possible to dilate the rima glottidis with some form of dilator or by intubation. In the latter, thyrotomy should be performed and an attempt made to cut away the cicatricial tissue; but this may not be successful, and then the tracheotomy tube must be worn permanently.

* *Lancet*, 1885, vol. i., p. 241.

Impairment of Function of Laryngeal Muscles may take one of the following forms:—

1. Temporary paralysis of muscles from disease.
2. Diphtheritic paralysis of laryngeal muscles. Is more prone to affect the abductors of the cords than the adductors, hence the dyspnœa (Semon).*
3. Tracheotomy mars the perfection of coincidence between the actions of the laryngeal muscles and those of inspiration and interrupts their usual rhythm (T. Smith).†

The treatment of these three conditions is the same, viz., to wait, for the muscles will regain their function in time.

Œdematous or Catarrhal Laryngitis.—Occasionally one of these conditions occurs as the result of the air passing through the larynx. This latter occurred on two attempts to remove the tube in Case 13, and I have seen it occur in another case, being relieved by the application of leeches.

These conditions, necessitating the prolonged wearing of the tube, are interesting and important, but want of space compels my reference to them to be brief.

* *Archives of Laryngology*, July, 1881, p. 197.

† *Medico-Chirurgical Transactions*, vol. 48, p. 227.

PERISCOPE.

DISEASES OF THE NERVOUS SYSTEM.

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Periodic Palsy.—(*Medical News*, October 20th, 1894.)—Within the last ten years there have been described a small number of cases of obscure nature characterised by the occurrence of transitory and recurrent palsy. Westphal described, in 1885, the case of a boy aged 12 who, for a period of four or five years, had attacks of paralysis of all four extremities, occurring at first every four or five weeks, and subsequently several times weekly, and lasting for from 24 to 36 hours. The paralysis was attended with loss of electric irritability of the affected muscles, diminution of reflex irritability, increased thirst, and free perspiration. Sometimes pain was present, and, as a rule, paræsthesiæ were noted. In 1890 Goedflam reported the case of a young man, 17 years old, who for three years suffered from attacks of generalised paralysis, lasting at first for three days, later for two days, and for one day, and recurring at intervals of varying duration. Eleven other members of the maternal branch of the family were said to suffer similarly. Males and females were almost equally attacked. Burr, in 1893, reported the case of a man 30 years of age who for ten years suffered from attacks, in which he was awakened from sleep by a sense of soreness in the muscles of the arms and legs, and, on attempting to move, found he was unable to do so on account of weakness. Consciousness was undisturbed, sensibility was not deranged, and the function of the sphincters was maintained. The attacks lasted from a day to a week, and recurred about once in four months. Burr relates the case

(described by Schachnowitsch) of a man, aged 44, who was subject to attacks of periodic paralysis, which always set in during sleep, and involved the arms and legs without sensory derangement, but with a sense of stiffness, lasting several hours. The patient's father had suffered similarly. Consot has recorded the case of a mother and four of eight children who presented periodic paralysis. There have also been reported a number of cases of periodic palsy of quotidian or tertian or of irregular type, in which the causative factor was believed to be malarial, but quite without adequate evidence. The most recent of this interesting group of cases is reported by Hirsch. The patient was a man aged twenty-six years, who, about once a year for a period of six or seven years, was, without obvious cause or exciting influence, seized with a sense of weariness and fatigue in the extremities, finally progressing to actual paralysis, lasting about twenty-four hours and suddenly disappearing. The reflexes were abolished, but sensibility was unaffected. During the continuance of the condition there was increased thirst. There was also increased cardiac activity and a systolic murmur was heard at the apex of the heart, together with accentuation of the pulmonary second sound. After the seizure the man was as well as before. He was not himself neurotic, but his mother had suffered similarly. In both the facial muscles escaped involvement. Virtually nothing is known as to the nature and etiology of this disorder. The disorder is closely allied to Thomsen's disease and to cases like those described by Martins and Hausemann in which paralysis supervenes on exposure to cold, especially when sudden, as a cold bath. The weakness is progressive and affects the hands, the fingers becoming clawed. Sometimes the muscles of the face and of mastication are affected. The feet may be affected if they are also subjected to cold. All the above-mentioned forms of paralysis present in common a family distribution and hereditary transmission.

Nervous and Mental Symptoms of Latent and Intermittent Nephritis without Albuminuria.—By Dr. Bremer, of St. Louis,

Mo. (*Medical News*, October, 1894). The author describes cases in which mental symptoms occur in the subjects of chronic nephritis. There may be no albuminuria, but casts are almost always found in the urine, although the specific gravity may be high. The mental condition is characterised by loss of conception of time and space similar to what is observed in alcoholic dementia. In some cases numbness of the hands and fingers, indisposition to work, a sense of pressure in the head, slow pulse, catarrhal conditions of the respiratory or digestive tract, rheumatic pains, neurasthenic symptoms, melancholia, and mania may be the clinical manifestations of nephritis. In one case facial neuralgia of a severe type, and lasting for months, disappeared suddenly on the supervention of a maniacal attack. At one epoch of the disease the neuralgia would alternate with attacks of profuse diarrhœa, the diarrhœa probably carrying off the toxic substances causing the neuralgia. In a number of cases a feeling of tension was experienced in all the muscles; and the author considers that this muscular spasticity is one of the earliest symptoms of uræmia. The prognosis in all these cases is not unfavourable; and the author recommends elaterium for clearing up the sensorium of nephritic patients. The reviewer had a man under his care suffering with uræmic coma. On his recovery from the coma, it was found that he had no memory, no knowledge of time or space, and has not been able to follow any employment for two years. Uræmic aphasia, hemiplegia, and neuritis are well known. It is important to remember that albumen may be absent from the urine, but casts are usually present.

Syringomyelia.—A case of this disease is reported in the *Bristol Medico-Chirurgical Journal*, June, 1894, by Dr. F. H. Edgeworth. He gives the following summary of symptoms :— (1) A condition allied to progressive muscular atrophy in the upper part of the body, as shown by the weakness in the neck and arm muscles and by the wasting of the intrinsic muscles of the hands; (2) spastic paraplegia of the legs; (3) diminution of tactile sensibility and a loss of thermic and algesic sensi-

bility; (4) preservation of muscular sense and of the common sensibility of the muscles and tendons. The case had been slowly progressing for many years, and it was atypical, in that tactile sensibility was affected; but cases of syringomyelia have been described in which tactile sensibility has been absent. There were no trophic lesions, hence the author concludes that it was not a case of Morvan's disease which is apparently syringomyelia plus peripheral neuritis. The typical symptoms of syringomyelia are—(1) progressive muscular atrophy in the upper extremities with a loss of sensibility to heat, cold, and pain, and rarely to touch; and (3) frequently spastic paraplegia of the legs. The symptoms of syringomyelia are due to secondary processes, either to distension of the persistent embryonic canal or to overgrowth with occasionally secondary breaking down of the neuroglia wall.

The Nervous Symptoms of Cirrhosis of the Liver.—In the *Medical News* (Philadelphia) Dec. 8th, 1894, attention is drawn to the nervous symptoms observed in cirrhosis of the liver. Wandering mild delirium with hallucinations and confusion of the identity of persons and places without convulsions or coma may occur for months before death.

The Nervous Symptoms of Patients suffering from Chronic Urethritis.—(The *New York Medical Record*, December 1st, 1894.) Dr. R. K. Macalester states that it is a well-established fact that irritation and disease of the genito-urinary organs are frequently the cause of manifold nervous disturbances. Beard, in his work on neurasthenia, writes:—"Disorders of the genital apparatus are continually exciting disease in remote organs. In men a little prostatitis or urethral or preputial irritation—not only phimosis, but even elongation with secretion of smegma—are constantly the sole and demonstrable origin of hypochondriasis, dyspepsia, and other nervous symptoms." A person, knowing that he has a gleet, by allowing his mind to constantly dwell upon the fact, falls a victim to nervous malady, and the nervous disturbances may progress to such an extent and prominence as to become the predominant feature of the case,

and the urethral disease may be overlooked or regarded as one of the imaginary troubles. The author considers that these nervous complications are more common and more severe in America than in Europe. In his experience it is rather exceptional to find a person who, being aware of having a gleet for some length of time, does not betray some marked nervous symptoms; while in Europe this is very common, but by no means the rule. The sufferer complains of weakness, is despondent and irritable. He may suffer from insomnia, vertigo, numbness of the extremities, dyspepsia, and frequently from prickling sensations or numbness along and around the urethra. He worries greatly over loss of semen, which he notices after an erection or defæcation. He may be totally disabled from work, and may remain a neurasthenic for life. With the cure of the gleet, and strictures if present, he may be completely cured. The author recommends the treatment of gleet adopted by Dr. Finger, of Vienna.

The Oral Education of the Deaf.—*New York Medical Record*, Dec. 8th, 1895.—A review of the methods of educating the deaf is written in this number. Dr. S. M. Miller defends the superiority of the new oral system of educating those congenitally or otherwise afflicted with dumbness. He states that the intermarriage of deaf men and deaf women necessarily thrown together by the manual sign-alphabet system, produces children a large proportion of whom are congenitally deaf; also that orally educated deaf persons can mingle without disability with the world at large while the manually educated cannot. He also points out that all Europe is oral and that America is lagging instead of leading in the education of the deaf and dumb. Eleven years ago Dr. A. Graham Bell showed that one-third of the total number of children of deaf and dumb parents were congenitally deaf. This means that they are also dumb, so far as articulate speech is concerned. He was forced to the conclusion that the method of instructing the deaf then mainly in vogue—(by the manual alphabet-sign system) isolated deaf men and deaf women from society in general, facilitated their inter-

marriage, and was therefore developing a deaf and dumb species of the human race. It is said that in the United States there is one deaf person in every fifteen hundred. The oral method was never introduced into America until 1887. There are practically only two methods in vogue for teaching the deaf—the oral method (teaching by and through articulate speech), and the manual sign-alphabet method. Under both methods the child is taught writing, composition, arithmetic, spelling, geography, and all the English branches. The methods differ distinctly in that the oral system endows its graduate with articulate speech and that the manual-sign system does not.

Localisation of Visual Cerebral Centre.—In the *New York Medical Record*, December 22nd, 1894, Dr. Allen Starr states that the entire tendency of recent investigation upon the visual area of the brain is to prove that the primary cortical visual centres lie about the calcarine fissure in the occipital lobe, that the angular gyrus has nothing whatever to do with vision, and that there is no lesion behind the optic chiasm, either in the thalamus or visual radiation or cortex anywhere which will produce a blindness in one eye alone. All lesions posterior to the chiasm produce homonymous hemianopsia. The entire consensus of opinion is opposed to the view, first advanced by Ferrier and the English school, that blindness in one eye can be produced by a cortical lesion; and the only case with autopsy, cited by Gowers, is unsatisfactory and inconclusive, because of an imperfect clinical examination of the visual field.

The Action of Chloroform on the Functions of the Human Brain and Cord.—(*New York Medical Record*, December 22nd, 1894.) Dr. Bedford Brown, of Alexandria, Va., cited the history of two cases of extensive compound comminuted fracture of the frontal bone and serious injury to the frontal lobes of the brain. The brain could be seen perfectly, and its varying changes of action under chloroform could be observed distinctly. The invariable action of the anæsthetic was to suppress hæmorrhage, to quiet cerebral pulsation, and to positively reduce circulation in the brain, and arterial tension. Any

struggling, mental excitement, or resistance while inhaling chloroform caused marked increase in the cerebral circulation and pulsation, with increase of hæmorrhage. When the patient was threatened with collapse from chloroform, stimulants injected in the rectum produced increased circulation and arterial tension in the brain promptly.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION. BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

A special meeting of this Branch was held on Thursday, January 31st, 1895, Mr. H. LANGLEY BROWNE, President, in the chair. Present, 34 members.

The committee appointed to consider the Draft Bill to amend the Medical Act made the following report.

“The Committee has held three meetings, and submits the following report :—

“The proposed legislation is in the form of a Bill entitled an Act to Amend the Law relating to Unqualified Persons who Practise Medicine and Surgery.

“Three draft Bills have been submitted by the Parliamentary Bills Committee. Of these your Committee has selected the draft approved by Mr. Muir MacKenzie, Mr. Costelloe, and Mr. R. W. Turner, and the following comments and amendments refer only to the text of that copy. (See *Brit. Med. Jour.*, January 12th, 1895)

“The Bill is intended to strengthen the law as it relates to

the improper assumption of medical titles or descriptions, and it inflicts a penalty of fine or imprisonment on those who infringe its provisions. Members of the Branch are asked to notice that this Bill in no way attempts to deal with the abuses of counter prescribing, or with unqualified practice of any kind where no medical title or description is assumed.

"Your Committee recommends that this Branch should express the opinion that no amendment of the law will be satisfactory which does not include effectual provisions for the suppression of such unqualified practice.

"Subjoined is an analysis of the clauses of the Bill, with the comments and amendments of your Committee.

"Clause 1. Section A prohibits the use of certain titles, 'or any of these or the like titles with any added words or designations;' while Section B, continuing, says, 'or any title, addition, or description,' etc., 'implying the possession of a medical qualification, or the skill necessary for the practice of medicine or surgery, or midwifery, or any branch of medicine or surgery.' The section also declares the penalties (£20 fine, or imprisonment), but restricts imprisonment to those persons convicted on indictment of inflicting grievous bodily harm.

"Your Committee approves of this clause, but would prefer to see a shorter list of titles and descriptions, with less pretension to comprehensiveness, if such a notorious example as 'bone-setter' is to be deliberately omitted. In Section B the word 'name' should be inserted on the first line after the word 'title,' so as to bring it into harmony with the words quoted in Clause 3.

"Clause 2 defines the persons who shall be considered as not duly qualified—viz., those who are not registered, or who do not possess a registrable qualification. This is approved; but Section C appears to your Committee to need the addition of the words 'in the United Kingdom' after the word 'registration,' while the remainder of the sentence should be left out.

"Clause 3 defines the words 'title, name, style, addition, or description,' and declares what is meant by the assumption of

them. This clause appears to your Committee to be quite satisfactory.

"Clause 4 permits prosecutions to be undertaken by the General Medical Council, by its Branch Councils, or by any of the medical corporations (defined as those mentioned in the Medical Act of 1886), or by any private person. Your Committee is of opinion that it would be wiser to make the consent of one of the aforesaid bodies necessary before any private person could institute a prosecution under the Act.

"Clause 5 determines the evidence necessary to the proof of non-qualification, making the Medical Register, or an affidavit of the Registrar of the General Medical Council, or of an official of one of the medical corporations sufficient proof either way.

"Clause 6 exempts from these penalties certain persons—for example, strangers merely visiting in this country, or persons who do not intend to practise. Your Committee fears that this would exempt such itinerant medical lecturers as Mrs. Longshore Potts, and recommends that only those shall be exempted who do not practise or intend to practise in the United Kingdom.

"Clauses 7 and 8, being only saving and titular clauses, need no comment.

"(Signed)

"H. LANGLEY BROWNE, Chairman.

"January 21st, 1895."

It was proposed by the President and seconded by Dr. Saundby that the report be adopted.

After some discussion this was carried *nem. con.*

The committee appointed to consider the various schemes proposed in connection with the Registration of Midwives made the following report:—

"1. That the fact of a large proportion of labours attended as at present by ignorant and untrained women constitutes a danger to the lives and health of parturient women and their infants.

"2. That it is expedient that a body of women, to be called

Midwifery Nurses, should be so trained as to be able to render efficient attendance on cases of natural labour, and to give first aid in accidents arising in the course of labour.

“3. That the Midwifery Nurses should undergo a process of training extending over twelve months, and at the end of that period should be examined, and, if then found efficient, their names should be placed on a register.

“4. That the education, examination, and registration of Midwifery Nurses should be under the direct supervision of the County Councils, subject to the control of the Local Government Board, or some other central authority.

“5. Any persons now practising as midwives should be allowed two years in which to comply with the new regulations as to examination and registration.

“6. That the attendance of Midwifery Nurses should be strictly limited to cases of natural labour, and that their duties and the penalties for disregarding or exceeding those duties should be defined by the local and central bodies above mentioned.

“H. LANGLEY BROWNE.

“January 14th, 1895,”

It was proposed by the President and seconded by Mr. M. A. Messiter, “That the Report be adopted.”

Sir Walter Foster moved the following amendment:—

“To delete all the Report of Paragraph 1 and to substitute the following words:—‘That in as much as the proper care of these lives before, during, and after the act of labour involves a knowledge of almost the whole arts of Medicine and Surgery, no one should be entrusted with them save fully trained and qualified practitioners.’”

This was seconded by Mr. Lawson Tait.

After considerable discussion the amendment was put to the meeting and was lost.

The original motion was then put and was also lost.

PATHOLOGICAL AND CLINICAL SECTION.

The third meeting was held in the Medical Institute on Friday, January 25th, at 8 p.m., Dr. MALINS in the chair.

A case of Alcoholic Pseudo-tabes.—Dr. Kauffmann showed a man aged 40, in fair general health, but having the appearance of a beer-drinker, and owing to a history of long-continued excessive drink. He presents much ataxia of the legs, a little of the hands, walks with feet wide apart, and has Romberg's symptom markedly developed. There is and has been no pain or tenderness of any kind. The sensation in the feet is imperfect, the floor feeling to him "like a lot of shavings," and touch impressions are slowly and inaccurately realised. The same applies to the hands, where dys-æsthesia and numbness are limited to the fingers up to the first interphalangeal joint, and are most marked at the finger tips. Palmar and dorsal surfaces are equally affected, as are the plantar and dorsal surfaces of the feet. There is, withal, comparatively little loss of muscular power, though some wasting is perceptible in the calves, and the peronei and tibiales are weak. The first dorsal inteross muscle of the right hand is a little wasted, and all are weak. There is and has been no interference with the functions of the bladder or rectum. The pupils are normal. The history obtained is that the patient was admitted to hospital with pneumonia in November last. Before this there was no paralysis or weakness. On recovery, he felt feeble and weak in the legs and never recovered. From that time to his present admission into hospital—three weeks ago—he went on drinking, and living poorly. Great and rapid improvement has occurred in the general condition and in the signs of local disease.

Hydatid of Brain.—Dr. Douglas Stanley exhibited a brain showing a large hydatid cyst. The patient was a boy, aged 12, who showed some paralysis of the left ocular muscles, the left fifth and seventh nerves, and feebleness of grasp on the left side,

and some left foot-drop. The superficial reflexes were very active, the knee jerk was lost on the right side, increased on the left. There was also left ankle clonus. *Post mortem* there was a well-marked hydatid cyst, about the size of a large hen's egg, in the right cerebral hemisphere. It was single, and no other cyst was found in any other organ.

Abscess of Cerebellum.—Dr. Douglas Stanley also showed an abscess formed in the left cerebellar lobe of a man aged 31. The patient gave a history of pain with redness and swelling behind the left ear fourteen years previously, for which he was leeches. There had never been any discharge from the left ear, but he was deaf on that side. He had headache, some vomiting, double optic neuritis, some left internal strabismus, variable in amount, and some slight swaying to the left side in walking. The symptoms had come on recently. He died somewhat suddenly with respiratory failure.

Mr. L. P. Gamgee also showed a specimen of acute abscess of the cerebellum from a patient aged 11. There was a history of a discharge from the left ear for eight years, and a swelling had been forming over that mastoid process for fourteen days. The patient was taken suddenly ill with vomiting the day before admission.

On admission the temperature was 101°, pulse 100, respiration 20. There was great retraction of the head, some pus in the left ear. No swelling over the internal jugular vein, no paralysis, but the patient was semi-comatose, and there was double optic neuritis. The mastoid antrum was opened and found full of pus and granulation tissue, and the temporo-sphenoidal lobe was explored, but no pus found. Death occurred twenty minutes after the operation, and at the *post mortem* an acute abscess of the cerebellum was found.

Fibroma of Ovary.—Kidney from a Case of Nephrectomy.—Mr. John W. Taylor showed (1) a specimen of small fibroma of the left ovary successfully removed from a single woman aged 32. The patient had complained of ovarian trouble for six years, and of severe pain in the left side for nine months.

The pain was *not* dysmenorrhœal. The tumour is clearly defined, and its outer wall is rather intimately adherent to the true ovarian tissue. The latter is attenuated and spread out over the surface of the growth. (2) A kidney of the right side, removed by abdominal nephrectomy for enormous saccular dilatation of the ureter. A large cyst (containing some gallons of straw-coloured fluid, and into which the ureter opened) was found behind the peritoneum. An attempt to enucleate the cyst was only partially successful on account of its intimate attachment to the duodenum. The kidney was removed, and the unenucleable portions of the cyst were drained. The patient made a slow but good recovery.

Improved Tracheotomy Tube—Mr. William Thomas exhibited an improved tracheotomy tube. He had frequently been impressed with the fact that in such instruments there was not sufficient provision made for easy removal and replacement, and especially for perfect cleansing of the inner tube, and some twenty years ago he had inner tubes constructed of two halves hinged together and regulated by a screw. The instrument he exhibited was similar, with some minor improvements suggested by experience. He had found it very successful, easier to pass and withdraw than any other, and offering perfect facilities for cleansing.

Femur from a case of Scurvy Rickets.—Mr. George Heaton showed a femur from a case of Scurvy Rickets. The shaft of the bone was completely separated from the lower epiphysis, and lay loose in a cavity filled with fluid blood and blood clot surrounded by the separated periosteum. The bone itself was small and deeply blood-stained throughout. The epiphysis was healthy. The parts were removed from a patient aged 18 months who showed well-marked evidences of the disease. There were swellings around both shoulder joints and of both thighs. The upper epiphysis of each humerus was separated from the shaft. The ends of the other long bones were enlarged and showed rickety changes. There were in addition several small sub-pleural hæmorrhages. The child had since the age of eight

months been reared almost exclusively on a proprietary infants' food.

Ureteral Calculus.—Mr. Christopher Martin showed a calculus which had been impacted in the right ureter. The patient was a young married woman with a tubercular history and numerous tubercular glands. She came complaining of constant severe pain in the right side of the pelvis of some weeks' duration. She had night sweats, loss of flesh, and fever. The pain was worse at the menstrual period, and quite incapacitated her. She had pain in the back, and bearing down. There were no urinary symptoms—no pus, blood, or albumen in the urine, no vesical irritation, no pain in or enlargement of either kidney. Bi-manually there was found, to the right side of the uterus, a tense oval swelling as large as an orange, very tender, and with obscure fluctuation. It was fixed to the lateral pelvic wall. It was diagnosed as a tubal or ovarian abscess. Suddenly, however, the pain was relieved, and the patient soon afterwards passed, *per urethram*, two cylindrical calculi, each about two-thirds of an inch long and one-third of an inch thick. The urine became loaded with pus. On examination, the pelvic swelling had disappeared. At the same time, all the patient's symptoms were relieved. Evidently the calculi had been impacted in that portion of the right ureter which pierces the base of the broad ligament to the side of the uterus. An abscess of the ureter had formed, and finally had discharged with the calculi into the bladder.

Peritoneal Cyst.—Mr. J. T. J. Morrison showed a specimen of a peritoneal cyst he had removed from the inguinal canal.

MIDLAND MEDICAL SOCIETY.

Meeting held on Wednesday evening, December 5th, 1894, the President, Mr. T. F. CHAVASSE, F.R.C.S. Ed., in the chair.

Cystic Kidney.—Mr. Edge showed a large cystic kidney which he had removed from a woman by abdominal nephrectomy. The patient made a good recovery.

Locomotor Ataxia.—Dr. Kauffmann showed a woman, aged 38, with marked symptoms and signs of locomotor ataxia together with wide-spread painful skin-sensations implicating the back of the trunk up to the fourth dorsal vertebra. These painful disturbances, which Dr. Kauffmann looked upon as being due to functional disturbance of the nerve-cells of the posterior horns of grey matter, had existed for sixteen years, dating from a wrench of the back sustained at that time. The definite signs of posterior sclerosis, viz., lightning pains, girdle-sensation, Ronberg's sign, and absence of knee-jerks commencing only six years ago.

The dorsal pain had almost ceased to trouble the patient and the fulminal pains in the legs had become much less severe under treatment. There was no discoverable trace of syphilis, and no cause for the disease other than the old injury could be found.

Pathologically the case suggested the consideration that the old injury had interfered with the nutrition of the posterior portions of the spinal cord, and that in the postero-external white columns of the lumbar region this altered function had led on to actual sclerosis.

Porro's Operation.—Mr. Christopher Martin showed a patient on whom eight weeks previously he had performed Porro's operation for impeded labour due to contraction of the pelvis. Patient was aged 29 years, was married, pregnant at the full term, and had been in strong labour for two days. She was 4 ft. 6 in. in height. The pelvis was very small, the true conjugate diameter being only $2\frac{1}{4}$ inches. Mr. Martin decided on

Porro's operation which he performed without delay. The patient made a speedy recovery, being up on the 24th day and out of doors on the 30th. The child was born dead.

This was the sixth case in which Mr. Martin had amputated the pregnant uterus—twice on account of contracted pelvis, twice for cancer, once for myoma, and once for rupture of the uterus.

Paper.—Dr. Foxwell then read a paper on the advisability of combining into one disease various catarrhal affections which at present received the names of the portions of the body attacked. The name he suggested for this disease was Catarrhus. The reasons he gave for this unification were:—1. These affections were evidently constitutional in nature. 2. In all of these the general character of the disease was the same, though naturally modified in local detail according to the part chiefly affected. 3. One of these affections never, or with extreme rarity, occurred alone; most commonly three or more arose together. 4. They all occurred under similar climatic and meteorological conditions. 5. They were mutually contagious—that is, any one of them did not necessarily reproduce itself in a fresh subject, but, with equal frequency, reproduced some other of the series. 6. If contagious, they must be due to a germ. Pneumococcus had been found in them all, and cultivations of this germ had set up conditions closely resembling some of them—*e.g.*, acute pneumonia and enteritis. Still the position of pneumococcus was not established, and it might well be that the causative germ was yet to be found. 7. Some individuals inherited a tendency to fall victims to this disease, as they did to tubercle, though predisposition was here far less important than in tubercle.

In conclusion, Dr. Foxwell gave a description of the disease as he saw it, enumerating the various affections which he included under it.

The fourth ordinary meeting of this Society was held on Wednesday, January 16th, 1895, the President, Mr. T. F. CHAVASSE, in the chair.

Pityriasis Rosea.—Dr. Leslie Phillips showed a case of pityriasis rosea, noteworthy as presenting some unusual aspects. When first seen, nine months previously, the circinate patches, involving the trunk, thighs, and arms, had faded characteristically, but had left irregular-shaped patches of the eruption symmetrically placed at the sides of the neck, anterior and posterior folds of the axillæ, and over the prominences of the hips. This efflorescence was indolent, rose-brown in colour, dry, finely desquamative, and slightly raised above the surface of the skin, especially at the margins of the patches. Twice during the time the man had been under observation catarrhal jaundice had occurred.

Dr. Purslow showed a fœtus from a case in which decapitation had been necessary to complete delivery. The case was one of impacted shoulder presentation. The midwife, on her attempts at delivery, had torn the arms completely away at the shoulder joint. All attempts at version proving ineffectual owing to the contracted state of the uterus, Dr. Purslow performed decapitation. Delivery was then easily effected.

Post Partum Hæmorrhage.—Dr. Malins opened a discussion on the treatment of post partum hæmorrhage. He alluded to the importance of the subject to the majority of the Society who were engaged in the practice of midwifery, and pointed out the value of trustworthy and accurate knowledge in times of emergency. The natural manner in which hæmorrhage is arrested after delivery was pointed out. Considerable stress was laid upon the prophylactic treatment and the treatment of those called "flooders." The order in which the treatment was enjoined after delivery of the placenta was—1. Manual stimulation, external and internal; bimanual compression also of the uterus in a position of anteflexion was noticed. 2. The application of cold and heat. 3. The use of ergot by mouth and

hypodermically. 4. The application of astringents, such as iron, by injection, swabbing, and tampon, and the use of vinegar. 5. Duhrssen's method of plugging the uterus. 6. Transfusion. The details of the above methods were considered, and the relative importance and advantage of each pointed out from the speaker's experience.

Mr. Alfred Freer said that the hæmorrhage in some cases began before delivery was complete. The most dangerous cases were those in which the hæmorrhage took place between the birth of the child and the expulsion of the fœtus; and in such cases separation and removal of the placenta was of the utmost importance. Women who indulged in beer excessively were often "flooders," and a purgative course of treatment before labour served as an admirable prophylactic. Vinegar and water had in his hands been of great service in some cases, and he preferred it to iron, which if used should be in very dilute solution. Neutral iron alone was to be preferred to the perchloride.

Mr. A. H. Evans said that post partum hæmorrhage was very rare in well-conducted labours. The worst cases were those in which in the absence of a medical man there had been only an imperfect delivery of the placenta. The passage of the hand into the uterus and a thorough cleaning away of all coagula was a very important item in the treatment. He called attention to distension of the urinary bladder as an occasional cause of difficulty in contraction of the uterus, and alluded to the importance of a quick pulse after delivery as a warning of impending hæmorrhage.

Dr. Purslow found that the most troublesome cases of post partum hæmorrhage occurred in primiparæ after the application of forceps under chloroform for protracted labour. He insisted upon the importance of never losing the manual control of the uterus after delivery, and always gave as a ventum treatment a dose of ergot after delivery.

Dr. Donovan said that the treatment of post partum hæmorrhage really began before delivery. The child should always be made to advance by forceps if the uterus when contracting

forcibly is not capable of advancing it. Exhaustion and uterine inertia are thus avoided. When the head is delivered, the advance of the body may be retarded, and the uterus thus given time to contract. Ergot should be given as a ventum treatment after the birth of the child.

Dr. E. Underhill laid stress on the importance of anticipating, if possible, the occurrence of hæmorrhage by a careful enquiry into the history of previous confinements. The uterus should be grasped with the hand immediately the child is born. He urged the importance of supporting the strength of the patient and the administration of easily assimilated food in cases of weakness.

REVIEWS.

THE HYGIENIC PREVENTION OF CONSUMPTION.*

THIS is a good and common-sense *résumé* of the prevalent opinions on this subject. It is written in a semi-popular style and should therefore prove valuable to Parents, Teachers, County Councillors, and others to whom the national hygiene is a care. On the other hand, to the medical mind this manner is somewhat depressing, often consisting in the stringing together of Tupperian platitudes. It further gives rise occasionally to an *ex cathedrâ* dogmatism which is unintentionally amusing: *e.g.*, "It has been stated that phthisis is very uncommonly found in conjunction with valvular disease of the heart. If it is intended to imply that persons suffering from heart disease are not liable to consumption, my experience would be against this contention, for I frequently see the two conditions present in the same patient. *There is nothing in*

* The Hygienic Prevention of Consumption. By J. E. Squire, M.D., M.R.C.P., D.P.H. London: C. Griffin and Co. Limited,

heart disease protective against phthisis." The solemn finality of the conclusion, which we have italicised, is so ludicrously unwarranted by the petty premiss of his personal experience.

The work consists of three parts:—A short account of the nature of consumption—Various measures to be undertaken to prevent the onset of consumption in the individual, and to hasten its diminution in the State—and thirdly, The hygienic management of the early stages of the disease. It is naturally on the second and third of these that the essential value of the work is based. To all of us it is sure to prove useful; for if it tells us nothing we did not know before, yet it will remind us with considerable completeness of the various details in the management of our cases and prevent the omission of any of these; moreover, to most of us many of its statements will be new.

A MANUAL OF HUMAN PHYSIOLOGY.*

PROF. RAYMOND states in his preface, that after twenty years' experience as a teacher of physiology he has come to the conclusion that only the main facts and principles of this branch of medical study can be, and indeed need be, assimilated by the student. In this we feel inclined to concur. A great deal of what is taught as physiology is perfectly useless to the student after he has passed his examinations, in other words, when he begins to think for himself. For this reason we welcome a short text-book on physiology such as the one that Prof. Raymond has written. It is really fuller than the tone of the preface would lead one to expect, and contains quite as much as is necessary for the generality of medical students. In addition to plenty of illustrations in the text there are four excellent coloured plates.

* A Manual of Human Physiology, Prepared with Special Reference to Students of Medicine. By Joseph H. Raymond, A.M., M.D. Philadelphia: W. B. Saunders.

New Books, etc., Received.

The Geographical Distribution of Tropical Diseases in Africa. By R. W. FELKIN, M.D., F.R.S.E., Lecturer on Tropical Diseases and Climatology, School of Medicine, Edinburgh. Edinburgh : William F. Clay. 1895.

Diphtheria and its Successful Treatment. By BROWNLOW R. MARTIN, A.B., M.B., Dub. Second Edition. London : Baillière, Tindall and Cox. 1895.

Atlas of Illustrations of Pathology, compiled for the New Sydenham Society. Fascic ix. ; Diseases of the Testis, Part I. London : The New Sydenham Society. 1894.

Year-Book of Treatment for 1895. Cassell and Co., London, Paris, and Melbourne.

Three Cases of Acute Pyelitis in Infancy. By EMMETT HOLT, M.D. Reprinted from *Archives of Pediatrics*, November 1894.

The Nomenclature of Diseases of the Gastro-enteric Tract. Report of the Committee of the American Pediatric Society. Reprinted from *Archives of Pediatrics*, August 1894.

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APRIL, 1895.

ORIGINAL COMMUNICATIONS.

ON THE LOCALISATION OF GALLSTONES,
AND THE SEVERAL OPERATIONS FOR THEIR
REMOVAL FROM THE BILIARY PASSAGES.

BY JORDAN LLOYD, M.S., F.R.C.S.,
SURGEON TO THE QUEEN'S HOSPITAL;
LECTURER ON OPERATIVE SURGERY IN THE MASON COLLEGE,
BIRMINGHAM.

ONE of the most important additions to professional knowledge, since the time when abdominal diseases came more often into the hands of the operating surgeon, is seen in our present views on the diagnosis and treatment of cholelithiasis. The teaching of my own student days—less than twenty years ago—has been entirely changed, and gallstones are recognised now where they would formerly have been absolutely unsuspected. The object of this paper is not so much to call attention to the general phenomena of gallstone disease, but rather to take another step forward and say where exactly does the calculus, or calculi, lie. Whether in the gall-bladder, the cystic, hepatic, or common bile ducts; and which is the operation best adapted to these varying conditions.

The *general* diagnosis of "gallstones" is insufficient to indicate the treatment appropriate to any case; just as would be that of "urinary calculus" without specifying whether the calculus was in the kidney, the ureter, the bladder, or the urethra. We cannot

at present diagnose with the same certainty the bile, as the urine stone—chiefly for the reason that we have no subjective method of “sounding” for the former, such as we may employ in the latter, but a careful investigation of clinical phenomena will, in the majority of cases, enable us to say with tolerable accuracy, not only that gallstones are present, but also in which anatomical region they are probably lying.

Of the causes of cholelithiasis we know but little. These calculi commonly originate within the gall-bladder, small masses of mucus being frequently their starting-point. Occasionally, however, small concretions are found primarily in the bile ducts. Gallstones are chiefly of two varieties—those consisting mainly of bile pigments and bile salts, and those of cholestearine. The former vary in colour from yellow to black, are opaque, soft, and usually multiple; the latter are more or less transparent, hard, and usually single. They are more common in females than males, and chiefly occur in child-bearing women at the later periods of life. They are predisposed to by tight lacing, and have been met with in women under 20. When calculi are small, they may be got rid of by passing down the gall ducts into the duodenum; or when large, may find their way by ulceration through the abdominal parietes, or into any one of the neighbouring viscera. When gallstones do not escape, the consequences may be serious and many: mechanical, inflammatory, or degenerative; for although medicinal and other remedies may palliate and may relieve some of their symptoms, they do not cure the malady. There are no reliable therapeutic means by which they may be dissolved or otherwise got rid of, just as there are no reliable internal solvents for calculi in the urinary tract.

Gallstones often lie harmless in the gall-bladder for years; but, as a rule, their presence sooner or later irritates the tender lining of this cavity, and a cholecystitis is set going. This inflammation is sometimes very acute, giving rise to suppuration or empyema of the gall-bladder; more often, however, it is catarrhal or sub-acute, and the cavity may become slowly distended

by its own mucous secretion. Cholecystitis due to gallstone, once started, becomes, as a rule, chronic, and leads to thickening, contraction, and entire loss of distensibility of the walls of this cavity, just as is the case in chronic cystitis of the urinary bladder. The gall-bladder becomes puckered and reduced to a mere thick-walled sinus, which is quite incapable of distension even under continued pressure. This practical obliteration of the gall-bladder is important always to bear in mind, as it explains the absence of a tumour from many gallstone cases, and constitutes, in addition, a serious difficulty when operation has to be undertaken. Inflammation easily spreads from the gall-bladder to the ducts, and puckers and thickens them in the same way; but when the common bile duct contains calculi which obstruct it near its entrance into the duodenum, it may become distended to the size of the small intestine. Inflammation very frequently spreads from the biliary apparatus to the peritoneum and causes adhesions with adjacent structures, such as the transverse colon, omentum, abdominal parietes, duodenum, stomach, or right kidney. Collections of pus may form in any part of the biliary passages, and may extravasate into the greater or the lesser sac of the peritoneum, the stomach and intestines, liver or kidney, or externally through the abdominal wall. It has been asserted, and with very good reason, that cancer of the liver is not infrequently a secondary consequence of cholelithiasis. Gallstones may prove fatal from the following causes:—Exhaustion, cholæmia, collapse during an attack of colic, peritonitis, pylephlelitis, hepatic abscess, intestinal obstruction, and cancer.

Before discussing the symptoms of cholelithiasis, may I remind you of the well-known facts, that "gallstones" are frequently found *post mortem* in elderly subjects where they have never been suspected during life, although the patients may have been under careful medical observation; and also that large biliary concretions have been passed per rectum without previous symptoms having existed, even although the calculi must have found their way into the intestine by ulceration. Schroeder

found gallstones in a series of autopsies at the Strasbourg Hospital to the number of 4·4 per cent. in men and 20·6 per cent. in women. Gallstones do not necessarily therefore give rise to symptoms of any kind. Their presence is only manifest when they become "engaged" in one or other of the different biliary passages, or when they set up irritation or inflammation in the structures enclosing them.

I believe that cholelithiasis is one of the most frequently overlooked disorders, and that scores of its victims go through life and often succumb to their maladies with their disease unrecognised. Gallstone attacks are often mistaken for biliousness, wind, cramp, spasms, congestion of the liver, indigestion, cardialgia, lead colic, renal colic, fæcal impaction, pleurodynia, neuralgia, and when more severe, for pleurisy, perihepatitis, peritonitis, appendicitis, intermittent fever, and intestinal obstruction. Recurrent attacks of pain in the belly should suggest to us concrete disorder, and should not be lightly passed over by the use of meaningless terms, like many of those just indicated.

The general symptoms of gallstones are characterised by paroxysmal irregular *pains* in the abdomen, starting either in the right hypochondriac or epigastric regions, radiating upwards to the shoulder tip or back to the scapula region, often accompanied by *nausea* and *vomiting*, and sometimes even by collapse. Fullness is often complained of, with anorexia, depression of spirits, and flesh loss.

We now no longer regard *jaundice* as an essential symptom (indeed in the large majority of cases it is conspicuously absent); but when present, much is to be learned from its careful observation. The finding of gallstones in the excreta is positive evidence enough, but their absence teaches us nothing; and similarly, too, with regard to the formation of a *tumour* in the right hypochondrium, its presence gives information of the greatest value, but its absence is of no real clinical significance. *Pyrexia* is met with when inflammatory processes are present, and, when of the intermittent type, is a phenomenon of the

greatest consequence in localising the seat of the concretion. *Local tenderness* is a sign of high value, and too much attention cannot be given to its characteristics. *Stabbing pain*, elicited by sharp, deep, heavy percussion over the right hypochondrium, is suggestive of calculus. Many other symptoms might be referred to, but I shall confine my remarks to-night more particularly to the few special phenomena of pain, jaundice, pyrexia, and local swelling, because it is by a careful consideration of these that our localisation is arrived at.

When the general diagnosis of cholelithiasis has been made, it is necessary, before considering the question of localisation, to remember that gallstones may be met with under six different conditions. These conditions may be divided into two groups: first, those in which the walls of the gall-bladder are yielding, and allow of its distension, as seen in Fig. 1; and secondly, when the walls are contracted, indurated, and indistensible, as seen in Fig. 5. A reference to the diagrams will make these several conditions clear.

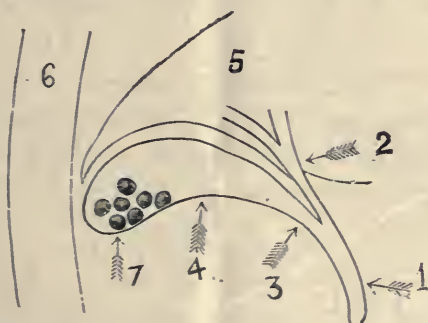


Fig. 1.—Multiple gallstones in a healthy gall-bladder.

The figures in all the diagrams indicate as follows:—1, Common bile duct; 2, Hepatic duct; 3, Cystic duct; 4, Gall-bladder; 5, Liver; 6, Abdominal wall; 7, Gallstones.

In the first group are placed—No. 1, in which the stone lies in the gall-bladder; No. 2, in the cystic duct; and No. 3, in the common bile duct. In the second group, in No. 4 the stone lies in the shrunken gall-bladder or cystic duct; in No. 5,

in the common bile duct, which, with the hepatic duct, is thickened and dilated, whilst the gall-bladder and its duct are shrunken and indurated; and in No. 6 the shrunken gall-bladder is packed with stones, and a calculus also is present in the common duct.

The condition indicated by No. 1 gives rise only to attacks of colic. There is usually no tumour, no jaundice, no pyrexia. If, however, a gallstone passes along the bile ducts into the duodenum, a slight attack of jaundice may follow next day, and the gall-bladder may become moderately distended.

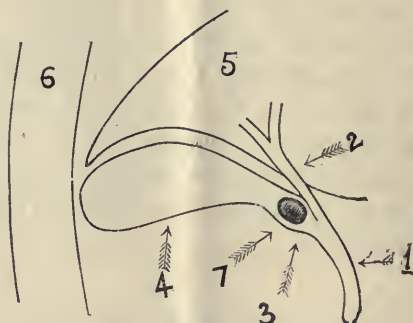


Fig. 2.—Calculus in the Cystic duct.

No. 2 is characterised by colic and the presence of a tumour formed by the distended gall-bladder. There is no jaundice.

No. 3, by the co-existence of colic, tumour, jaundice, and sometimes pyrexia.

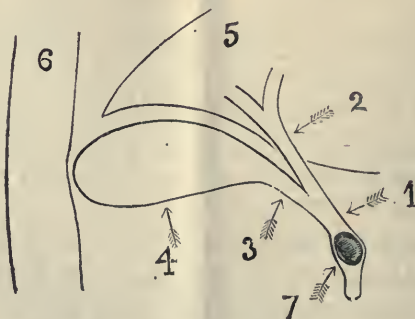


Fig. 3.—Calculus in the Common Bile duct.

It is well to remember that chronic jaundice, accompanied by a distended gall-bladder, is most commonly due to malignant disease of the liver or pancreas, and is not accompanied by the pyrexial phenomena, of which I shall speak more in detail when I come to the consideration of the more common condition as figured in 5 and 6.

No. 4 is the most difficult of all to diagnose. It may be suspected where paroxysms of pain are frequently recurring, and where pyrexia and local tenderness are present. There is no tumour and no jaundice.

No. 5 is, to my mind, the most interesting and, in some ways, the most important of the whole group ; and its diagnostic recognition we owe entirely to the observations of Dr. Osler, of Baltimore. Since reading Osler's paper, in 1890, I have been enabled accurately to diagnose three cases of "chronic obstruction of the common bile duct by gallstones," and have in each case confirmed the diagnosis by operation. Osler's symptoms are three in number, and there can be no mistaking them. 1. Paroxysmal hepatic colic. 2. Well-marked ague-like attacks, characterised by chill, sweating, and fever. 3. Chronic jaundice of varying intensity, deepening after each paroxysm, and fading during the intervals.

No. 6 has symptoms similar to No. 5, and can only be recognised at the time of operation.

Before leaving the subject of symptoms I should like finally to add that as a rule the pains of hepatic colic shoot upwards and backwards, whereas those of renal colic shoot downwards and forwards ; that the characters of a distended gall bladder are a round-ended swelling which appears under the tip of the ninth right costal cartilage and enlarges along a line running obliquely downwards and inwards immediately below the umbilicus. The tumour is "anchored" above beneath the ribs and cannot be depressed much by manipulation although it descends freely on deep inspiration ; distension of the colon pushes it upwards and forwards. Tumours of the right kidney, on the other hand, begin in the loin and enlarge horizontally forwards

and inwards; they are "anchored" towards the middle line, and can be moved vertically through a greater distance by manipulation than by respiration, and they are hidden and pushed out of sight by distension of the colon; and lastly, that chronic jaundice without distension of the gall bladder is more likely to be due to gallstones than to malignant growths.

I now propose to consider briefly the several operations applicable to each of these several conditions, and to state from my own experience the practical conclusions I have arrived at.

The operations applicable to No. 1, when a stone lies free in the gall-bladder, are cholecystostomy, cholecystotomy, cholecystectomy, and cholecystenterostomy; of these cholecystostomy is, I think, the proper procedure, and it is one of the most simple and satisfactory of surgical operations. The abdomen is opened by a two or three-inch vertical incision from the costal margin at the outer edge of the rectus muscle, or when a tumour is to be felt, the incision may be made immediately over it. The gall-bladder is exposed, pulled up into the wound, and emptied of its liquid contents by trocar and canula; the puncture opening is enlarged, the edges of the bladder wound held with forceps, and the stone or stones removed with a scoop. The open gall-bladder is then sewn to the fascia covering the rectus, or to the muscle itself with a continuous silk suture, a drainage tube inserted, and the skin wound brought together with two or three interrupted stitches. This operation is usually spoken of as cholecystotomy, and is that most commonly performed, but strictly speaking, cholecystostomy is its proper title. Cholecystotomy rather should imply the opening of the gall-bladder, and its return into the abdominal cavity with its incision sutured or not according to circumstances. It is performed in a similar manner to cholecystostomy, but its death-rate is higher, and it has no real advantages of any kind. Cholecystectomy—excision of the gall-bladder—has been advocated as a preventive of subsequent gallstone formation, and is not difficult to perform: the calculi are removed as above described, the gall-bladder is separated

from its attachment to the liver as far as the cystic duct, tightly encircled with a silk ligature at its neck, and cut away, or before ligaturing, its peritoneal and muscular coats may be divided transversely at the neck, the mucous membrane only enclosed in the ligature, and the muscular and peritoneal layers sewn over the stump with a continuous Lembert suture. I look upon cholecystectomy as an unnecessary procedure, and its higher mortality should certainly exclude it in the condition we are now considering. Cholecystenterostomy has recently been advocated in this class of case by Murphy, of Chicago, who has invented an ingenious anastomosis button which makes the operation easy and rapid. He justifies his proposal chiefly on the ground that cholecystostomy is liable to result in permanent biliary fistula—a statement entirely opposed to the experience of Tait, Robson, Ferrier, and myself. To anastomose a gall-bladder, emptied of its calculi and whose ducts are clear, with a duodenum is, in my opinion, an unwarrantably dangerous and unnecessary measure, although it may be so easily and quickly done with a Murphy button.

When a stone is impacted in the cystic duct, as seen in No. 2, and the gall-bladder distended in consequence, the incision should be made over the situation of the tumour. The same operations are feasible here as in No. 1; but, in addition, cholelithotripsy or choledochotomy may be called for. Of all these operations cholecystostomy is that which should first be tried, and should be supplemented by another procedure only when it has failed. When the abdomen is opened, a stone in the cystic duct may be felt by slipping the finger beneath the liver along the outer surface of the gall-bladder, and may be most easily squeezed back into the gall-bladder before that cavity is opened. If this cannot be accomplished, the gall-bladder is incised and emptied of its contents, as already described, and an attempt made to lift the impacted calculus out of its nest with a scoop or forceps working from inside the cavity, aided by fingers working from without. The stone may have to be broken up before it can be dislodged, and this may

be done by splitting it with a round sharp-pointed needle, or by crushing it with suitable forceps from within the gall-bladder. If these measures fail, the needle may be pushed into the stone through the walls of the duct, or the offending calculus may be crushed by means of rubber-padded forceps applied outside the ducts. Any of these procedures are spoken of as cholelithotrity; and should all of them fail, we may leave the stone where it is, complete our cholecystostomy in the usual manner, and take steps to remove the obstruction by daily injections of watery or oily solutions, or we may perform cholecystenterostomy instead; this latter operation is certainly more justifiable here than in the first condition described. There is no necessity, however, to leave an impacted stone behind, for choledochotomy—incision through the duct walls—is a practicable and tolerably safe procedure. The cystic duct should be incised in its length over the calculus and towards its right side, and the stone removed with a scoop. The opening in the duct may sometimes be closed with a continuous Lembert suture; but owing to its depth from the surface of the body, the limited space in which to work, and the encroachment of the surrounding structures, this can rarely be satisfactorily accomplished. Fortunately, however, this is a matter of little consequence; but if we cannot suture accurately, we must insert a glass drainage-tube down to the opening in the duct, pack it lightly beneath with iodoform gauze, which is brought out at the lower angle of the external wound, and removed in thirty-six or forty-eight hours. I have dealt with three cases in this manner with most satisfactory results.

The condition figured under No. 3 is less common than those already dealt with, and its operative treatment is practically identical with that of No. 2; I would add, however, that cholecystostomy is less likely to succeed here because of the distance of the calculus from the outlet of the gall bladder, and that cholelithotrity and choledochotomy are more difficult because of the depth of the space in which our manipulations have to be

carried on. The former of these two latter operations should always be performed if at all possible.

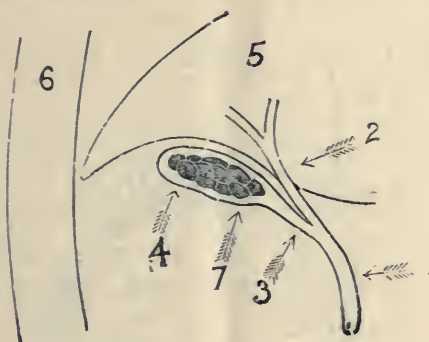


Fig. 4.—Multiple Calculi in a contracted and thickened Gall-bladder.

The treatment of No. 4 introduces us to a condition in which the gall-bladder is so contracted that it cannot be sutured up to the abdominal parietes, the operation of cholecystostomy is therefore impracticable: cholecystotomy with suture of the opening, although possible, is usually both difficult and dangerous. Cholecystectomy might be available, and in certain circumstances should be tried. Cholelithotripsy, except as supplementary to other operations, need not be considered. Cholecystenterostomy is impracticable by mechanical apparatus such as Senn's bone plates and Murphy's buttons, because of want of space in the gall-bladder, and to anastomose with simple sutures in this condition is absolutely impracticable. It is by cholecdochotomy, therefore, or cholecystotomy without suture, that we can most efficiently and safely deal with this class of case. It is upon free and perfect peritoneal drainage by means of glass tubes and iodoform tampons that we have to rely, and the details of the treatment have already been described when dealing with No. 2. In connection with this and the remaining two varieties it may be desirable also to drain the right lumbar peritoneal pouch by means of a tube through the abdominal wall in the lumbar region just below the lower end of the right

kidney. I have adopted this plan in a recent successful case, and with great advantage.

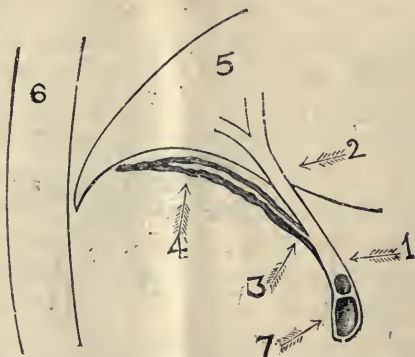


Fig. 5.—Two Calculi in the Common duct, with the Gall-bladder empty, contracted, and thickened.

I come finally to consider the operative treatment of Nos. 5 and 6, to which two only (cholelithotripsy and choledochotomy) of the half-dozen named gallstone operations are at all applicable. I have tried them both and have had good results with each, but on the whole I am inclined to favour the major and more radical procedure of choledochotomy. In making the incision into the duct which runs along the free side of the gastro-hepatic omentum, it is well to remember that in the omentum lies also the hepatic artery and to the left and behind is the portal vein. The incision therefore must be made *upon* the calculus, vertically and to the right. An opening at so great a depth cannot be satisfactorily sutured. It is a waste of labour, in my opinion, to attempt it. Give part of the time which would be frittered away in useless suturing to the cleansing of the peritoneum, the careful arranging of the drainage tube and its circumjacent iodoform packing, and your patient's prospects will be benefited. I have now had many experiences of the tamponing of abdominal wounds with iodoform gauze, and have absolute faith in its drainage efficiency and its harmlessness to the peritoneum. In No. 6 separate incisions would have to be made into the contracted

gall-bladder and the common duct, and two drainage-tubes might possibly be required.

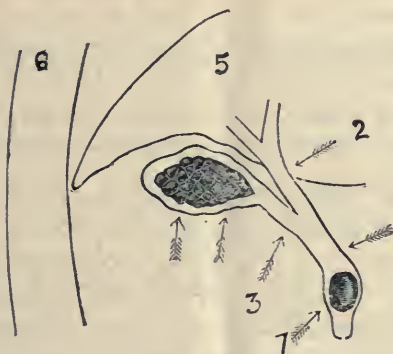


Fig. 6.—Multiple Calculi in a contracted and thickened Gall-bladder, with a Calculus in the Common duct.

My friend, Mr. Rutherford Morison, of Newcastle-on-Tyne, has recently called attention to the advantages offered by transverse incision through the abdominal parietes, affording, as it does, easier access to the structures beneath the liver, and permitting of efficient tube-drainage from the outer angle of the wound. He disapproves of suturing the gall-bladder to the abdominal wall, because of its liability to be followed by permanent fistulæ; but in this matter I think he is wrong. I have adopted the transverse incision several times lately, and can speak well of it.

I have purposely abstained from referring in detail to my own cases from a desire to save your time, and have purposely avoided reference to the many complications which may result from gallstone disease.

ON A CASE OF ACUTE CATARRH.*

BY ARTHUR FOXWELL. M.A. M.D. CANTAB, F.R.C.P. LOND.,
PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

A FEW days ago some of you were with me at the bedside of a young girl of 15 in a state of high fever, suffering from what I pretty confidently told you was acute general tuberculosis. Three days later, in the *post mortem* room, we found that diagnosis to be wrong, no evidence of tubercle being present. And yet my diagnosis was not arrived at rashly or hastily. It was not definitely made till the third day of her illness, nor till my fourth visit. Moreover, even now, with the result of the *post mortem* before us, I still think I was justified in my view, though not perhaps in holding it with any confidence. And this confidence I should probably have withdrawn had I examined her on the day of her death, for one would think there must then have been evidence of widespread consolidation; but at my last visit she was fast dying, and I thought it not right to disturb her.

Let me now detail the case to you, and add to its narration some explanatory comments, so that you may judge for yourselves of the wisdom of my diagnosis.

E. L., a healthy girl of 15, a press-worker, who, her mother tells us, was the chief stay of her family, was taken suddenly ill at noon on the 9th of November with what appears to have been a distinct rigor, with vomiting, acute pains in her knees, and severe headache. These latter symptoms got steadily worse, and she was brought to the hospital and admitted under my care the same evening. The patient herself had suffered from scarlet fever at the age of 7, ever since which time she had had incontinence of urine. She had only menstruated once,

* A clinical lecture given at the Queen's Hospital.

and that was eight weeks previous to her present illness. Her mother believes she got wet through on the 4th instant.

On admission, she was found to be well developed, though spare, and rather small for her age. Her temperature was 104° . She had severe pains in both ankles, both knees, and both shoulders; but her head was what she chiefly complained of. She kept vomiting a bile-stained fluid, and her tongue was cracked and furred. It was also noted that her heart-sounds were heard better to the right than to the left of the sternum, and that their frequency was great.

The next morning, the 10th, twenty-two hours after the onset of her symptoms, I saw her for the first time, and noted as follows:—The patient lies curled up on her right side, but she is restless and frequently changes her position. She complains scarcely at all now of her joint-pains, but piteously asks for relief from the pain in her head, which, however, she cannot localise. She is conscious, and answers questions readily and quite rationally, though she is said to have active delirium during the night. The pulse is about 140, but very difficult to count by reason of its great irregularity in size and rhythm; with the larger and stronger beats the peripheral tension is noted to be high. There is no sign of a rash on any part of the body. The tonsils are swollen, red, and dry, but there are no white dots or patches on them. The conjunctivæ are suffused, the pupils mobile and equal. No sign of local paresis observed anywhere. The respirations are markedly Cheyne-Stokes in character, and between thirty and forty in the minute. There is no photophobia, but slight dulness of hearing. The abdomen is much retracted, and there is some doughy resistance near the right superior iliac spine, with deficiency of resonance. No *tâche cérébrale*. The heart is greatly upset: its apex-beat is not distinguishable, pulsation is feebly felt in the fifth space $1\frac{1}{2}$ in. to the right and $\frac{1}{2}$ in. to the left of the sternum; a slight thrill was also at one time felt over the second and third right spaces. There is no cardiac dulness to the left of the right edge of the sternum, but on the right there is considerable

dulness over the third space.* The heart-sounds are distinct, but feeble and laboured, and are more distinctly heard on the left of the sternum; the second sound is accented at both bases, but chiefly on the right. The percussion note is deficient from the clavicle to the third cartilage on the right near the sternum. There are rhonchi and sibili scattered throughout both lungs, and in places the breath-sounds are harsh, but nowhere can any definite change in their quality be detected.† The liver dulness appears to be normal, and the organ is not felt in the R.N.L.; but on the left side, from the left edge of the sternum to the mid-axillary line, there is dulness below a horizontal line drawn through the upper part of the seventh sterno-chondral junction. (Probably due to the liver and an enlarged spleen.) Posteriorly, at the left base the resonance is good. The general note over the chest is hyper-resonant, and in places distinctly tympanitic.

At this time it was impossible to make any specific diagnosis. One thing, however, seemed sadly certain—viz., that the patient was attacked by a terribly acute septicæmia, from which her chance of recovery was very slight, as evidenced by the complete overthrow of the heart. The tonsils resembled the condition of these bodies at a corresponding period of scarlet fever; but she had had the disease, the tongue was not of scarlatinal character, and at no time did we notice a red rash. The pains in the big joints made one think of acute rheumatism; but their early vanishment and the absence of effusion at once negated this supposition. On the other hand, rheumatoid pains are not unknown during the early stages of scarlet fever, though more common later on or during convalescence. Septic pneumonia

* This peculiar area of dulness was probably due to consolidation of the right lung, the resonance on the left being the result of compensatory distension of the left lung. The heart-sounds would naturally be better conducted through the solid lung.

† I can only account for this thus: either the consolidation was deep (when dulness would also be probably absent), or the tube leading to the solid area was blocked, and the harsh breath-sounds were those of the still pervious and tensely distended air-sacs.

was the condition most prominently brought before our minds ; yet the dulness below the right clavicle appeared too marked to be the result of mere hyperæmia of the subjacent lung, while the absence of any bronchial quality in the breath-sound prevented our admitting the existence of any considerable consolidation there. Lastly, the mobility of the chest seemed to negative the idea of the dulness being due to old pleural thickening. Further, the cerebral symptoms were extremely marked for acute pneumonia in a girl of her age, though they all—viz., the headache, delirium, and Cheyne-Stokes' breathing—might be due to poisoned blood. Yet this cerebral condition made me think of more than mere poison in the blood—viz., of meningitis. Now meningitis may accompany pneumonia, and then it is more usually on the convexity of the brain, and not seldom becomes suppurative, but may also arise from miliary tubercles deposited around the vessels in the *pia mater* at the base of the brain ; it then, as a rule, produces local paresis of a cerebral nerve from involvement of its origin in the inflammation. The condition of the lungs—one of general acute hyperæmia with acute emphysema of portions of them—would well agree with the early and rapid deposit of grey tubercle in these organs. It is true the shock of the onset was too sudden and fulminant for acute tuberculosis, but such beginnings do, though rarely, occur.

Such attacks often arise from auto-infection from an old tubercular focus, and the dulness at the right apex suggested such a focus. One of the commonest situations for the deposit of miliary tubercle, according to Cohnheim, is in the choroid, but I regret to say I omitted to examine that membrane, or indeed to use the ophthalmoscope in any way, though, as you know, another very important sign is swelling and indistinctness of the discs.

Cerebro-spinal meningitis is another acute disorder which had to be considered. The pain in the joints, the cervical opisthotonos, the curled-up position in which she lay, all pointed to this ; but the frequency with which she changed her attitude

prevented my attaching much importance to her position, and there was no complaint of pain along the course of the spinal cord or nerves.

Typhoid is frequently hard to distinguish from acute tuberculosis; but you will tell me this is when tuberculosis comes on in its more usual and insidious form. And that is quite true. Neither disease commonly is initiated with suddenness and rigor, but both *may* be. Only some six weeks ago I saw, in consultation with a very able practitioner, a girl of 7 who, ten days previously, had been seized in the afternoon with rigor and vomiting and a following temperature of 104° . For seven or eight days this temperature remained high (between 102° and 105°) notwithstanding frequent spongings. The child was quite conscious, bright, and playful, though irritable. In the lungs many rhonchi and râles existed, though no evidence of consolidation. My friend naturally looked upon it as a case of acute pneumonia, and patiently waited for the consolidation to become superficial. As this did not appear, he began to suspect tubercle of the brain, and was on the watch for some local paralysis. Finally, on the tenth day, he sent for me, and then we found the disease had so far developed as to leave but little doubt in our minds that the case was an aberrant one of typhoid, and the subsequent course of the illness confirmed our diagnosis.

But to return to our patient. The next day, the 11th, at 10 a.m. her temperature underwent a great fall, to 101.3° . There had been persistent vomiting and semi-delirious restlessness. After sitting up she became slightly cyanosed, and her circulation was still greatly disturbed, though the pulse was more distinct and regular. The heart's apex was now apparently in the fourth space near the left nipple, but there was much epigastric shock, and the dulness was still more extensive on the right than the left. The breathing was of the same character; but at the right apex, where the dulness was, the BS. were harsh and the expiration long, with increased VR. and occasional fine crepitation. The rhonchi had greatly

decreased generally. The mouth was slightly drawn to the right side.

At 2 p.m. the right pupil was slightly larger than the left, though both were equally mobile. The pulse had gone up to 256 (from 132), while the respirations still remained about 28. The pains in the joints had vanished. The vomiting had almost ceased.

The next day, the 12th, the blood was examined, and no tubercle bacilli or other organisms were found in it; nor were there any in a little sputum which had been spat up. The urine was not examined for bacilli. There was but little change in the lung signs, and the respiration was of the same character. The heart's apex beat without the left nipple line, and the aortic second sound was strongly accented. There was now a left convergent squint as well as the facial paralysis, and these increased as the day went on.

It was now that I decided on the tubercular nature of the attack. The local paralyses were almost convincing evidence of basal meningitis, and by far the commonest cause of this at the patient's age is tubercle. The marked nature of the paralyses and their persistence seemed to negative the idea of mere hyperæmia or œdema, especially as the mentality remained so clear.

The P:R. ratio was very much against a pneumonia so violent and acute as this would have to be, as the respirations averaged about 30 to the minute. Moreover, the persistency with which they maintained the Cheyne-Stokes character, and the rapid and great variations of the pulse (as much as from 120 to 250 in the course of two or three hours), pointed to a persisting involvement of the medulla by something more than mere poisoned blood.

The condition of the lungs still remained more significant of tubercle than pneumonia, though the condition of the right apex was now approaching that of consolidation; but this suggestion of pneumonia was outweighed by the cerebral paralyses. Besides, the conjunction of acute pneumonia and acute tuberculosis, though rare, is not unknown.

The next day she again complained of pains in the left arm and both legs. An herpetic rash appeared over the right trochanter. Signs of consolidation were detected at the right posterior base and in the axilla as well as at the right apex. The P:R. ratio became more pneumonic (160 : 52), and the cheeks became more flushed. This was on Sunday, when I did not see her ; but it is quite evident, from these notes of Mr. White's, that she then had manifest signs of pneumonic consolidation of most of the upper and lower lobes on the right side. She grew comatose Sunday evening, and was bled to $\bar{3}$ vi. from the arm, with return of consciousness for two or three hours, and could answer questions when I saw her the next morning, though she was evidently moribund, and died in the evening at 5 ; again comatose.

Let us once more consider our diagnosis. Acute rheumatism and scarlet fever were put on one side after the first twenty four hours, as the pains in the joints vanished, and no rash nor ulceration of tonsils showed itself.

There remained typhoid, cerebro-spinal meningitis, septic pneumonia, and acute tuberculosis.

The patient did not live long enough to eliminate typhoid : the spleen was enlarged, and that was the only marked sign which could have appeared. But the nature of the onset, the early lung complication, and the presence of meningitis (as we thought) were so exceptional that I did not seriously consider it.

Cerebro-spinal meningitis was a disease to consider throughout. The herpes on the trunk is rather characteristic. But there was never any evidence of spinal pain though the cerebral pain was so marked. Moreover, the presence of spinal irritation, as evidenced by the flexion of the limbs and the pains in the joints, was very uncertain and fugitive.

As I have said, against the pneumonia were—first and chiefly, the definite local cerebral paralyses, which are very rare in this disease, and may be said to only exist in the septic or epidemic form ; secondly, we had the absence of any definite signs of pneumonic consolidation, though these appear to have arisen before death ; thirdly, there was the comparative slowness of the

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respirations; fourthly, the marked hectic nature of the continued fever—a daily and regular range of 4° —from 100° to 104° .

Treatment.—Recognising the extreme disturbance of the heart as the chief indication for treatment, she was given $\mathfrak{m}$ v. of the tr. of strophanthus every two hours. Cold compresses were applied to the head to ease its pain, and three grains of calomel were administered. As the strophanthus was constantly vomited and no relief in any form had arisen, a quarter of one of Nativelle's granules of digitaline was substituted, another dose of calomel was given, and an ice-bag was applied to the head. The next morning, as the bowels were still unopened, a castor oil enema was administered with good result. The vomiting still continuing, her food was limited to a teaspoonful of iced peptonised milk and soda water every half-hour, with this prescription:—

Bism. subnitr.	...	...	gr. v.
Acid. hydrocyan. dil.	...	...	$\mathfrak{m}$ iii.
Sod. bicarb.	...	...	gr. v.
Aquam ad	...	...	$\bar{3}$ i.

$\bar{3}$ ss. quaque quarta hora sum.

To reduce the temperature, she was frequently sponged with cold water. Later in the day strophanthus was given per rectum, as the digitaline was also vomited; and she was now fed every three hours with an enema of $3\frac{1}{2}$ oz. of peptonised milk and 4 drachms of brandy. Paraldehyde given in drachm doses by the rectum did some good towards quieting her restless nocturnal delirium.

On the morning of the 12th, having, as I have previously told you, decided in favour of tuberculosis, I placed her on iodoform, this drug having had the best results of any in my hands in the treatment of tubercle. She was given three grains every four hours, and the next day this dose was increased to four grains—that is, twenty-four grains a day—an amount which should be enough to render antiseptic the body of a girl of her age.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

BY JOHN W. TAYLOR, F.R.C.S., ENG.
SURGEON TO THE BIRMINGHAM AND MIDLAND HOSPITAL
FOR WOMEN.

(Continued from page 83).

VI.—“MOLLUSCUM PENDULUM” OF THE LABIUM.

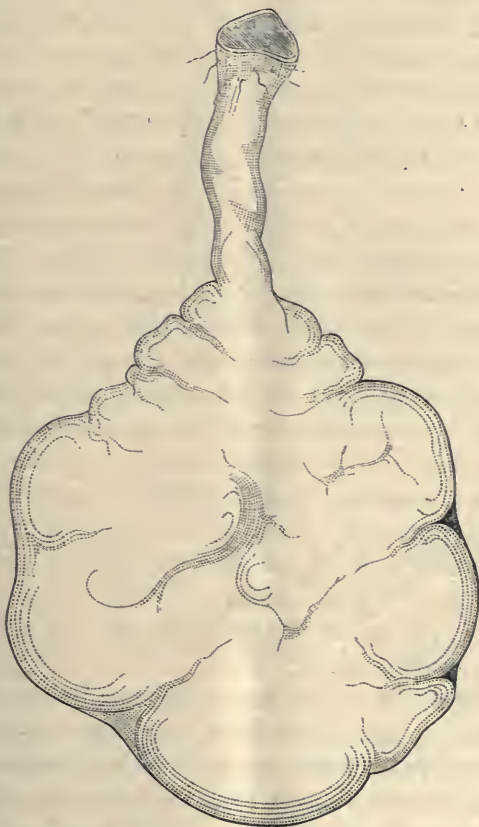
THIS curious tumour undoubtedly belongs to the less common diseases of the vulva, but has received only very scant notice from gynæcological writers; and we have to turn to the text-books on diseases of the skin to find any satisfactory account of the growth.

Dühring defines Fibroma molluscum as “a connective tissue new growth, characterised by sessile or pedunculated, soft and firm, rounded painless tumours, varying in size from a split pea to an egg or larger, seated beneath and in the skin.” (*Diseases of the Skin*, third edition, p. 461.)

Crocker writes:—“The tumours which constitute this affection are, for the most part, roundish or teat-shaped. They may be firm in parts, but are generally lax, so that the contents can, when pinched up, be rolled between the fingers. The skin over them is either tense or lax, usually smooth, and of normal colour and surface, though sometimes bluish or pinkish from vascularity; while those with constricted base are of a brownish or brownish-red hue. A hair sometimes, or one or more comedones, conspicuous from their size, are to be seen in the centre. In almost all other respects they present great variety. In number they may be from one or two up to hundreds and even thousands. In size they are from a pin’s head to an egg or an orange, or larger, but for the most part they do not exceed a walnut. They are round, oval, pyriform, or polypoid. Some are embedded rather deeply under the skin, and are to be felt rather than seen; others are distinctly raised, but still

sessile, and with a broad base like a mollusc; while others, again, have a pedicle, which becomes narrow eventually, and the tumour then hangs flabbily down like a polypus." (*Diseases of the Skin*, p. 487.)

Of this pedunculated nature was the tumour which is figured in the accompanying pen and ink drawing. It is the largest



Molluscum Pendulum of Labium. Natural size.

growth of the kind which I have removed, but may be regarded as fairly typical of molluscum pendulum as seen in gynæcological practice.

In contradistinction to the disease as described by dermatologists, the tumour, when growing from the vulva, is remarkably uniform in type, size, and appearance. It is single, its size is that of a small Mandarin orange, it grows from one labium and hangs from it by a more or less marked peduncle, and the upper part of the peduncle is usually the seat of some scattered growth of hair, which extends from the labium downwards. There must of course have been a process of growth, as the history of each case extends backwards for several years. There must have been a time when the growth was sessile and small, but I have never had an opportunity of seeing a case at this stage. The reason of this appears to be sufficiently obvious. The growth intrinsically is absolutely painless, and so long as the patient can put up with her infirmity, she will conceal her trouble even from her nearest relations. But when the tumour becomes thoroughly pedunculated, new conditions arise, which are apt to be followed by serious changes in the tumour and special discomfort to the patient. The increasingly imperfect blood supply of the little growth, its own weight, and especially the momentary torsion of the pedicle which necessarily occurs in walking, produce œdema of the skin covering or forming the tumour. A slight abrasion of its surface may be followed by unhealthy ulceration, and, in spite of the supposed painless character of the affection, the tumour, under these conditions, can become acutely painful and a constant source of misery to the patient. Before or by the time this stage is reached, she will seek advice.

The growth may occur at any age after childhood, but is more frequently seen in middle life. The skin which covers or forms the growth—for there is usually a central irregular nodule or plaque of fibrous tissue which represents the consolidated connective tissue of the deeper layers of the corium rather than any true fibrous tumour—partakes of the general character of the patient's skin; for instance, in the case from which my illustration is taken, the skin is plump and well-nourished, the patient being a single girl of only twenty-one years of age, while

in two other specimens, now before me, which I removed from patients of thirty-eight and thirty-nine years of age respectively, the skin forming the molluscum is thinner, more wrinkled, and already shows signs of age.

These three cases represent, I believe, all the examples of this tumour which I have met with in my Hospital practice during six years. Taking a rough average of eighteen new out-patients every week this would give a proportion of 1 in 1,800 cases of diseases peculiar to women. So far as I have been able to watch the practice of my colleagues in addition to my own I think this would approximately represent the frequency with which molluscum pendulum of the labium occurs in gynæcological practice in the midlands.

The treatment consists in the removal of the tumour close to the labium. This is best done by a small flap operation cutting slightly into the tissue of the labium. A small vessel in the centre of the pedicle may need forcipressure or ligature. The flaps are brought together and united by a very fine silk suture. My last case was operated on in this way and the little wound was completely healed in four days.

AN UNCONSIDERED FACTOR IN THE PRODUCTION OF PREMATURE BALDNESS.

BY LESLIE PHILLIPS, M.D.

SURGEON TO BIRMINGHAM SKIN AND LOCK HOSPITAL.

HIPPOCRATES and Aristotle asserted that women were "exempt from baldness," and gave, as a reason, that they were not subject to the exhaustion attending the service of Venus in the same degree as men. This explanation is probably as correct as that of Grellier, who believed that baldness was more common in men than in women owing to the smaller quantity of fat beneath the scalp in males than in females.

But while the explanation does not commend itself to modern ideas, it throws light upon the prevailing views of antiquity, and

is interesting as affording a reason for the opprobrium which, without doubt, attached to baldness. Julius Cæsar's lack of hair was a source of constant annoyance to him, for in public opinion it was a matter of reproach.

While, however, it is not quite true that women do not become bald, it is correct to say that women become bald much less frequently, in a less degree, and later in life than men, although considerable thinning of the hair does very frequently take place in them. A consideration of the significance of this relative condition in the two sexes will not be without interest, and it is an observation which is the common property of medical and lay men.

"I am getting bald as quickly and as certainly as possible, while my wife, who is 55 years old, and who has been throughout her life a martyr to severe headaches, has still a magnificent head of hair." This is a type of the remarks business men often address to the historically talkative barber as the latter snips away his locks. The words are such as barbers hear daily, and words which generally lead to interchange of views between the hair-cutter and the hair-cuttee on the pathology and therapeutics of this decadent tendency of the scalp masculine. These popular views do not advance or change much. "You see with our head gear there's no ventilation; that's the reason we lose our hair." The association of the circumstances justifies the sequence in the opinion of both, and they separate mutually satisfied that they have settled the little point. It is not material that this view was held a century ago, and that since that time convention has periodically punctured men's hats with ventilating holes without affecting the tendency. The ventilation is inefficient and therefore non-effective, it is said, in order to make results square with theory. Just as it is now, so also formerly was great prominence attached to the necessity for securing free access of air to the hair, although, as a matter of fact, this is probably a factor of very small importance, for certainly the male habit of hair-cutting facilitates this access of air as nothing else could. Our example, Cæsar, indeed, went bareheaded in all sorts of weather.

Medical men have begun to distrust their old views about this same ventilation, and have thought it wise to step forward a little ; so now it is the resisting nature of the material from which our head gear is manufactured that should be blamed. "The hard felt offers marked obstruction to the circulation through the temporal and other scalp arteries by compressing them against the hard sublying skull bones, with the result that the nutrition and vitality of the hair is impaired, and baldness results." All this is a mere revival of the teaching of Cazenave, Rostan, and Pr  cy ; and no doubt there is some truth in it ; but its authors lack the sense of proportion. It also is only a small element in the matter.

A much more obvious and exact explanation lies at hand. What I wish to emphasise in this note is an association which seems to have been strangely overlooked. As mentioned in the first paragraph, premature loss of hair is very much commoner in men than in women. And this marked difference in the two sexes coincides with very marked differences in the conventional treatment of the hair. The association and relation of these two circumstances obviously agree with and are an example of the well-known pathological proposition that disuse leads to atrophy. In men the hair is habitually cut short from childhood, while in women the converse is almost universally true. In boyhood and manhood by clipping or cutting the hair we remove the gentle traction on the bulb and follicle which the natural weight of the hair exercises, and which constitutes the essential and natural stimulus necessary to secure due innervation and vascular supply to the hair-producing structures. Loss of vigour, and finally more or less pronounced atrophy, is the inexorable result, modified or delayed, it may be, by collateral circumstances, predispositions, or conditions. In the light of the same consideration, the rationale of the beneficial influence of regular, gentle, and prolonged dressing and brushing of the hair is to be sought for in the stimulating influence of traction upon the circulation within the hair bulb and follicle.

In ordinary cases of premature baldness, excluding of course cases due to alopecia areata, we simply have a partial application of the scientific principle of panmixia, according to which every faculty must disappear as soon as it ceases to be necessary. The protective function of the hair is trespassed upon by the more or less substitution of artificial coverings. But this is not all; indeed it is really but a small factor in the matter compared with the conventional systematic cutting or removal of what Nature designs to be for both sexes at once an ornamental and a useful appendage. Even in cases owning other elements of causation, as, for example, seborrhœa or syphilis, this pathogenetic factor of induced atrophy of the bulb cannot be eliminated from the proper consideration of the equation, for it constitutes the most weighty consideration in the prognosis not only of simple premature baldness, but of alopecia seborrhœica, and alopecia syphilitica. As might from the circumstances be expected, seborrhœa in women is much less often accompanied with so marked a defluvium as in men, the reason being that, where the hair has been habitually worn long, the important factor of induced functional debility or atrophy is absent.

Moreover, treatment is much more successful in women, and the prognosis is invariably and infinitely better than in men. I recently treated a case of alopecia pityrodes in a lady who for some years had worn her hair short. The result was satisfactory, much more so than is usually the case in men, and I think we are right in assuming more satisfactory than would have been the case had the patient, like a boy and man, adopted the clipped fashion from early childhood instead of for a few years only.

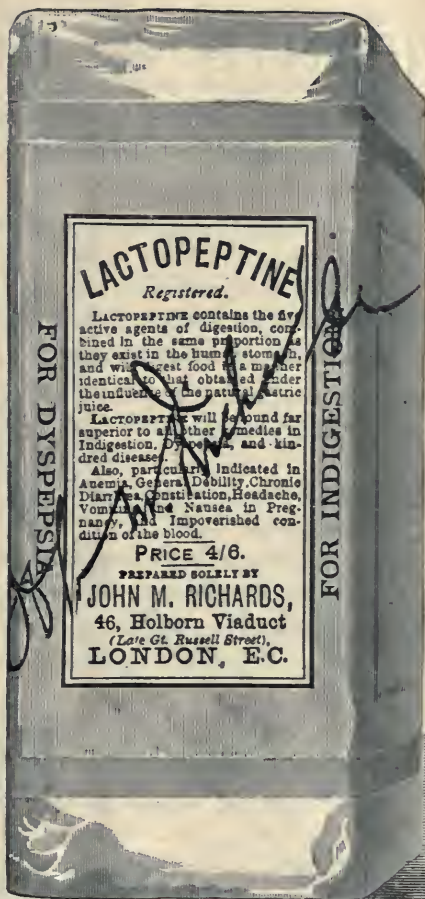
Again, alopecia, as a symptom of the syphilitic dyscrasia in women, is generally noticed as a passing and unimportant manifestation only, and very seldom to the marked extent that it may be found in men. In these cases also the prognosis undoubtedly is that the duration and necessity for treatment are less in women than in men.

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forth their emancipation by cutting their hair short, and so asselting a peculiarly mannish convention. If the hair so got rid of is beautiful in quality, this is indeed a sacrifice to an ideal, as the cutting of the hair by men was originally a compliance with an ideal, although in later times obviously a convenience. Jeremiah puts cutting off the hair in the same class as circumcision, which, like other mutilations, has been shown to be of the nature of a representative sacrifice.

It may be pointed out to these ladies that such a proceeding is a retrogression and not an advance, since it opposes Nature. The hair by nature is long. In the case of women our convention respects the universality of law, and the hair is worn long. In the case of men and emancipated hair-cropped women, we contravene Nature's law, and Nature's revenge is—slowly, perhaps, but none the less surely—atrophy.

Other ladies cut the hair short under the strangely mistaken idea of strengthening it. This error I shall refer to at greater length in a subsequent note, and for the present it will be sufficient to point out that in the light of what has gone before, this error is as strange in conception as it is faulty in result.

THE JEWISH METHOD OF SLAUGHTER.

THE English translation of Dr. Dembo's account of his investigations into the comparative merits and demerits of the various methods of slaughter now in use brings into prominence a question of some interest to the members of the medical profession. It is not only that the subject demands attention from the point of view of humanity—although the choice of a method which shall involve the least possible infliction of pain is a matter on which we ought clearly to have something to say; but, as Dr. Dembo shows, questions of hygiene and economy are more closely connected therewith than many of us have

hitherto realised. We venture, therefore, to call attention to a few of the chief points on which emphasis is laid in this important book.

Dealing first with the matter from the humanitarian standpoint, Dr. Dembo makes out a strong case indeed in favour of the Jewish method of slaughter, or "Shecheta." In this method the carotid arteries are directly opened by a cut with a sharp knife, the so-called "Shochet," with the result that a very large volume of blood is at once poured forth, the supply to the brain is completely stopped (except as regards the insignificant quantity conveyed by the vertebral arteries), and an extremely rapid fall of blood-pressure takes place. Dr. Dembo's repeated observation that under these circumstances consciousness is completely and invariably lost in from three to five seconds needs no arguments to recommend it to anyone acquainted with the facts of medicine or physiology; and that part of the book which is devoted to a demonstration of the impossibility of any prolongation of or return to consciousness, and of the purely reflex nature of the convulsions, vomiting, and other apparently voluntary acts which may follow—and which, it must be noted, equally follow other methods of slaughter—strikes the medical reader as somewhat unnecessary and laboured. It must, however, be remembered that the author does not write for the medical profession alone, but that he has to meet objections raised by those who are innocent of all such technical knowledge. Apart from these quite certainly futile objections, the chief arguments raised against the method lie, first, in the rather more elaborate preparations involved in binding and laying down the animal, and secondly, in the pain involved in cutting through the sensitive structures of the neck. With regard to the first point, we may note that Dr. Dembo describes an extremely simple and rapid method of performing these preparations, which results in the laying down of the animal without struggling or violence of any sort. As to the second point, the fact is undeniable that such pain is inflicted. But the real question to be decided is whether or no the other methods of slaughter now in

use are at all more merciful in this respect. That this is not the case, we think Dr. Dembo fully proves. The methods are as follows:—

Transfixion of the neck with a pointed knife or two-edged dagger, which, after piercing the principal blood-vessels, is either left in the wound or made to cut its way out through the soft structures. The first of these two alternatives is adopted in those abattoirs in which the blood is collected for the manufacture of albumen; it involves a slow death and is obviously unjustifiable. The other, which approaches more nearly the Jewish method, and differs from it only in the less efficient manner in which the large arteries are opened, is usually adopted in England in the slaughter of sheep and calves.

Stunning with the Mallet or Poleaxe.—Both of these methods, as well as those which follow, are employed in slaughtering cattle; and in both the animals are supposed to be rendered unconscious before any cutting operations are undertaken. In the latter method, a hole is first made in the skull, through which a cane is inserted with the object—rarely attained, however—of destroying the medulla oblongata. After unconsciousness has been produced, the carotid arteries are opened, and the animal bleeds to death. In order to realise how utterly illusory is the idea that by such means a rapid loss of consciousness and insensibility to pain is produced, one has only to read Dr. Dembo's account of his own experiences in many of the principal slaughter-houses of Europe. So far from unconsciousness being produced by a single blow, either with the mallet or the poleaxe, we find that it is the exception for the animal even to fall down after the first blow, whilst Dr. Dembo concludes that on an average from five to six are required before it is sufficiently stunned to enable the butcher to complete his work; and several instances are quoted in which a long interval—in one case amounting to as much as twelve minutes—elapsed between the striking of the first blow and the occurrence of unconsciousness. The torture involved in such a process must be infinitely greater than the temporary pain

produced by a cut with a sharp knife and followed by certain unconsciousness in a period amounting to at most five seconds.

Amongst other methods may be mentioned *Bruneau's Mask*, which is only a modification of the poleaxe, and *Sigmund's Shooting Mask*, both of which have met with so little success that they are scarcely used even in those abattoirs which are presided over by their inventors.

Finally, in the *Neck-stab*, a method much in use in Russia, and to a less extent in Germany and some other countries, in which a knife is thrust between the occipital bone and the first cervical vertebra, and the spinal cord completely severed, not only has Dr. Dembo shown by dissections that the supposed destruction of the medulla cannot possibly be effected in the usual manner of dealing the blow, but he has repeatedly found that the animal remains fully conscious whilst the further operations are performed.

The superiority of the Jewish method from the point of view of humanity is thus, we think, fully established; and in England, where probably the most prolonged of all methods—namely, that of slaughter with the poleaxe—is in vogue, the appearance of this book should not fail to produce some modification in our methods of procedure.

The hygienic aspect of the matter affords even less room for doubt than the humanitarian. Even on theoretical grounds it would seem reasonable to suppose that that meat would be least prone to decomposition in which the vessels have been most completely drained of their blood. That in this respect the preference lies with the Jewish method there can be no manner of doubt, for, with the exception of that by transfixion, it is the only one in which the brain and spinal cord remain intact. In all the other methods, on the other hand, a greater or less degree of vasomotor paralysis is invariably produced by the processes which are necessary to cause unconsciousness; and it appears to be admitted on all hands that, for this reason, materially less blood escapes in them than in the former method.

Dr. Dembo has, however, furnished positive evidence as to

the hygienic superiority of the shecheta. Starting with the assumption that the early onset and long duration of rigor mortis are essential for the provision of wholesome meat, he shows, by a number of experiments, that in the Jewish method rigor mortis not only begins in but little less than half the time required in other processes, but that its duration is greater by several days. Moreover, by actual estimation of the amount of ammonia produced at various stages of decomposition, he has proved that its formation both in high and low temperatures, is much less rapid—an observation which only confirms the quoted experience of several butchers to the effect that meat obtained by the former method of slaughter can, even in summer, be preserved longer by two days than that obtained by other methods.

The advantage from the economic view lies also, as far as the public is concerned, with the Jewish method, inasmuch as the more complete emptying of the blood-vessels diminishes the weight, and therefore the relative price of the meat. Compensation to the butcher would, however, probably be effected by a corresponding alteration in the rate of charges.

This summary of the matter will, we hope, serve to draw attention to a subject which is important in these respects, and which, we cannot help thinking, is one on which the medical profession may fairly be expected to pronounce an opinion. If the Jewish method of slaughter is really the least painful; and at the same time produces the most wholesome meat, the sooner some move is made in the direction of its general introduction the better will it be for all parties concerned.

REPORTS OF CASES.

A CASE OF STRANGULATED UMBILICAL HERNIA, COMPLICATED WITH PREGNANCY. OPERATION ; ABORTION ; RECOVERY.

BY J. HAZELWOOD CLAYTON, M.B.
CASUALTY SURGEON TO THE QUEEN'S HOSPITAL.

M. C., a married woman aged 44, was admitted, on April 4th, 1894, into the Queen's Hospital with a strangulated umbilical hernia. The hernia was of about ten years' duration, and was the size of a large cocoa-nut. There had been intestinal obstruction, with vomiting, for a week. The patient had had fifteen children, the hernia appearing after the birth of the third. Her health had been good, though at the time of admission she was suffering from a severe attack of bronchitis.

On admission, the patient stated that she had been admitted two years previously under Mr. Jordan Lloyd, and had worn the truss then ordered until a fortnight ago, when she left it off as it caused pain. The swelling felt nodulated, and evidently contained a large mass of omentum, whilst at the lower part a distended coil of intestine could be recognised. The skin was thin and of a brown colouration. She had had no movements of the bowels for over a week, and had pain and tenderness in her hernia, and was vomiting frequently a brownish frothy material, which was however free from faecal odour. The rectum was empty, and enemata returned without producing any result.

On April 5th, the symptoms having progressively increased, I decided to operate. A median longitudinal incision over the swelling was made. Some clear yellow fluid escaped on opening the sac, and an omental mass presented. On separating the adherent omentum from the sac, a portion of the transverse colon, deeply congested, and a distended coil of small intestine were seen ; whilst passing from the upper margin of the ring to

the umbilical cicatrix was visible the round ligament, and this, as it passed over the transverse colon, mainly assisted in producing the obstruction. The edges of the ring were thickened and rounded. The round ligament was ligatured as far up as possible and divided, the omentum ligatured in four portions with silk, and removed. The intestine returned, the sac cut away, and the neck sutured with silk, the aponeurotic edges of the ring approximated with silk-worm gut, the excess of skin removed, and the edges sutured with silk.

April 6th. Patient comfortable, no more vomiting, no movement of bowels, and, according to her own statement, no passage of flatus. Bronchitic condition bad. Nothing allowed by mouth. During the temporary absence of the nurse, the patient got out of bed, about 4 p.m., to drink from the water-jug.

April 7th. At 4 a.m. premature labour set in, and a foetus (between fifth and sixth months) expelled, with membranes entire and placenta attached. The uterus was washed out with sterilised water. The abdominal wound healed, and no tension on the stitches. The bronchitic condition rather better. Flatus freely passed.

April 8th. Uterine discharge scanty, but not offensive. No pain.

April 19th. Vaginal discharge very slight. Abdominal wound quite healed. Regular action of the bowels.

April 24th. Patient allowed to get up.

April 26th. Patient discharged cured.

This case presents several points of interest. The patient had not the faintest suspicion that she was pregnant, and the distended coils of intestine completely masked the enlarged uterus. In spite of the patient having got out of bed, and the subsequent expulsion of the foetus within 48 hours of the operation, there was no separation of the abdominal wound, but firm union, and the recovery was rapid and complete. The chief point of interest lay, however, in the relation of the round ligament to the contents of the hernial sac; and it would seem

probable that this foetal remnant plays a much more important part in causing obstruction in umbilical herniæ than it has hitherto been credited with.

CLINICAL NOTES FROM THE CHILDREN'S HOSPITAL.

BY GEORGE HEATON, M.B., F.R.C.S.
SURGEON TO THE HOSPITAL.

THE following cases, which illustrate some of the more uncommon surgical ailments of children, have been under my care during the past few months.

Large Venous Nævus of the Tongue, causing sudden death from Asphyxia.—A. W., a female infant æt. 4 months, was admitted into the Hospital on July 17th, 1894, suffering from a swelling of the tongue causing dyspnœa. The tongue was swollen at birth, but had increased considerably in size during the few weeks before admission. On admission, the tongue was much enlarged and protruded from beyond the lips, causing the cheeks to bulge. Occasionally the organ could be retracted within the mouth. Any local stimulation caused it at once to swell and completely fill the mouth. The swelling was caused by a large cavernous nævus situated chiefly in the left half of the organ and extending backwards to the epiglottis. The dyspnœa was most marked at night and occasionally threatened to suffocate the child.

On July the 26th, the infant was anæsthetised and an attempt made to produce consolidation of the nævus by electrolysis. Three steel electrodes connected with the positive pole of a galvanic battery and one connected with the negative pole were inserted deeply into its substance, and a current from four cells passed through for eight minutes. Under its influence the nævus seemed to swell and harden. There was troublesome hæmorrhage on removal of the electrodes. No appreciable improvement followed the operation, and it was decided to ligature the lingual arteries on both sides in the hope of curing the nævus.

This was done on August 9th. Chloroform was again given, and Mr. Heaton ligatured both lingual arteries through the usual curved incision on each side. No difficulty was experienced in the operation and both wounds were closed and healed by primary union. The operation had the effect of greatly reducing the size of the nævus and the tongue became of normal size for some time. Before the patient was discharged from the hospital, however, on August 22nd, the tongue had again begun to increase in size, but was causing no symptoms of dyspnœa. The child was seen at regular intervals and progressed well until the beginning of December, when the nævus rapidly enlarged and caused occasionally attacks of dyspnœa. Towards the end of December these attacks became more severe, and on December 27th the child died suddenly in a suffocative attack, some 4½ months after the last operation.

Tubercular Caries of the Tarsus ; tarsectomy ; cure. —

J. C., aged 5, a delicate strumous boy, was admitted with advanced tubercular disease of the left tarsus, on October 30th, 1894. Swelling of the foot with pain and tenderness had been noticed for 18 months before admission, and the foot had been kept completely at rest in plaster cases for six months. But in spite of treatment, abscesses formed on the inner side of the dorsum of the foot, burst and had left two discharging sinuses leading down to carious disintegrating bone in the region of the scaphoid and cuneiform bones, and surrounded by thin undermined skin infiltrated with tubercular products.

On November 20th, the patient was anæsthetised and the limb rendered bloodless with an Esmarch's bandage. A longitudinal incision was made on the inner side of the foot and converted into a T-shaped one by an incision across the dorsum. The carious bone was completely removed and consisted of the head of the astragalus, the scaphoid, and internal and middle cuneiform bones. All diseased skin was cut away, and the large cavity thus left filled with boracic acid powder and a 10 per cent. emulsion of iodoform in glycerine, and the wound dressed with iodoform gauze.

The wound was not disturbed for three weeks, and at the end of that time, on December 11th, only a superficial granulating patch remained where the tubercular skin had been cut away. When last seen, on January 20th, 1895, the foot was quite sound, and the patient could walk on it with only a slight limp.

Congenital Fæcal Fistula at the Umbilicus, due to persistence of the omphalo-mesenteric duct ; death ; necropsy.—J. Y., a male infant, was admitted into the Children's Hospital on October 30th, 1894, with a fæcal discharge from the navel. The history given was that at birth nothing abnormal was noticed by the midwife, who ligatured the cord in the usual way. Fæces were passed per anum for the first two days after birth, but at the same time there was some fæcal discharge from the navel. From that time up to the date of the child's admission into hospital when 16 days old, all his motions had been passed through the navel.

On admission the child was extremely emaciated. At the umbilicus was a fæcal fistula with considerable prolapse of mucous membrane of the bowel through it. On examination of the fistula no spur could be detected, and there appeared to be only one channel connecting the intestine with the fistulous opening. The rectum and anus were normal, and contained some small hard scybala. The child took its food ravenously, but passed only semi-digested curds through the abnormal opening.

An attempt was made to induce closure of the fistula by means of a piece of elastic tubing, which by its pressure should resist the outflow of fæces, and induce them to pass along the bowel. This however caused obstinate vomiting and had to be discontinued. Enemata per rectum were given, and brought away a small amount of fæces, but with this exception all fæces were passed through the umbilicus until the child's death on November 6th.

On making a *post mortem* examination the fistula at the umbilicus was found to lead into a short diverticulum arising from the ileum about seven or eight inches from the ileo-cæcal

valve. The bowel above the diverticulum was of normal size, but below it both small and large intestine were much contracted. The cæcum and vermiform appendix lay in the true pelvis attached to the sacrum by a complete meso-cæcum. From this the ascending colon passed upwards on the left side of the spinal column and then passed over above the umbilicus to the normal situation of the hepatic flexure, and from there followed a normal course.

Multiple Pedunculated Adenomata of the Rectum.—A. T., a boy aged 4, was brought to the Hospital on July 24th, 1894, with a history of bleeding from the bowel. For more than a year the child had been noticed to strain much whilst at stool and passed with the motions a varying quantity of blood and mucus. During the few months before admission this trouble had increased, and on five occasions small "masses of flesh" had been noticed in the stools. One of these on examination was found to be a soft fleshy mass, and under the microscope had the structure of a columnar-celled adenoma. On an examination of the rectum several smaller masses could be felt. An anæsthetic was given on July 27th and the anus well dilated. Two large and five or six small pedunculated bright-red polypi were seen growing from the mucous membrane of the rectum. They were extremely vascular and bled readily when touched. The larger masses were ligatured and excised. The smaller ones were torn away and the bleeding stopped with the actual cautery. The child was discharged well ten days later. Six months later the child was again thoroughly examined under an anæsthetic. The rectum was thoroughly exposed, but no trace of polypi seen.

Renal Calculus ; nephrolithotomy ; recovery. — W. T., a boy aged 11 years, was admitted into Hospital under Dr. Richards on November 21st, 1894, suffering from pains in the left loin. There was a history of pain in the left side for twelve months past with an occasional passage of urine resembling "port wine." During the intervals the urine was quite natural. The attacks of pain were at times extremely severe,

but had no connection with the act of micturition and were not predisposed to by exercise.

A few days after admission, on November 25th, the boy had an attack of pain and passed urine containing a large quantity of blood. An examination of the abdomen and of the bladder gave negative results. Neither kidney could be felt, there was no stabbing pain to be elicited on sharp pressure over the renal region, and little if any tenderness in that region. A diagnosis of left renal calculus was made and the case transferred to Mr. Heaton.

On December 4th, the patient was anæsthetised, and Mr. Heaton explored the left kidney. No stone could be detected by the fingers, but on exploring the kidney in several directions with a sharp needle, a calculus was detected in one of the lower calyces. A tenotome was introduced and two small uric acid calculi extracted with the fingers and lithotomy scoop. The wound in the kidney bled freely and was plugged with iodoform gauze. The skin wound was closed except in its middle.

The shock after the operation was extreme. Though the colour remained good, yet the pulse in the extremities was almost imperceptible for some hours. He afterwards made a rapid and uneventful recovery. The packing was removed on the second day and a drainage tube substituted; and this was finally removed on December 9th. The urine remained "smoky" until December 15th, when all trace of blood disappeared. On December 25th and a few following days a slight trace of blood was again detected in the urine, but afterwards disappeared, and he was discharged well on January 9th. The stones were composed entirely of uric acid and weighed 35 grs. and 5 grs. respectively.

A CASE OF ENUCLEATION OF MYOMA OF THE UTERUS FILLING THE PELVIS.

BY FRED EDGE, F.R.C.S., WOLVERHAMPTON.

L. M., aged 48. Anæmic and pale. She has had three children. For the last fourteen months she has lost heavily at her periods and has had excessive leucorrhœa in the intervals. There was great weight and sense of pressure in the pelvis, and other general symptoms were present. There was no mistaking the presence of a large rounded mass filling up the pelvis, and so closely applied to the symphysis that it appeared to grow from the back of the latter. It was almost immovable and could not be elevated out of the pelvis even on using considerable force from the vagina. It was dull on percussion, felt hard, did not fluctuate, and was located symmetrically in the median line. Per vaginam the cervix was slightly flattened. The sound passed $3\frac{1}{2}$ inches. The mass was one with the uterus above and was found to fill the pelvis like a child's head. Behind the cervix two lumps were felt which were tender and somewhat yielding, and these were taken to be the ovaries and tubes. The patient had been under treatment for twelve months, she said, before she came to me, and, as she was getting weaker and the tumour larger, there seemed every chance that the effect of the menopause, which is so confidently spoken of, would arrive too late.

I therefore determined to explore the uterine cavity and make sure of the absence of a polyp or submucous myoma, the removal of which would perhaps have cured the hæmorrhage for a time or for good. If nothing intra-uterine were found I intended at a subsequent operation to proceed to explore abdominally and, if possible, remove the appendages, or if a pedicle could be obtained, proceed to hysterectomy. Of myomectomy or enucleation I did not think that there would be any likelihood.

The patient was therefore anæsthetised; and, after dilating

the os with Hegar's dilators, I explored the uterine cavity, and found the endometrium soft and spongy, but nothing projected into or was prominent in the cavity. The endometrium was curetted, a 50 per cent. solution of zinc chloride was applied, and a strip of iodoform gauze inserted. This operation enabled a more complete examination to be made; and the size and site of the tumour were determined and its fixity estimated. From there it seemed to me that the appendages might be just attainable; or that, perhaps, after dividing the broad ligaments, I might obtain a pedicle for the clamp.

The second operation was undertaken a week after the first; and the patient had been in a very nervous state, and took her food but moderately. Perhaps the patient would have picked up after the curetting had she gone home for a month; but, on the other hand, it seemed to me that, so far as the uterus itself was concerned, no time could be better than after a free curetting and drainage of the uterine cavity, when the uterine congestion would be at its lowest point. The operation was as follows :—

After dividing the parietes I came upon the tumour, which presented the appearance more of a dense walled broad ligament cyst. Repeated attempts were made to deliver the tumour from the pelvic cavity by pulling with several volsellas, which were held by the assistant, and by using one hand in the vagina and one upon the mass. They were in vain, since the tumour spread extensively into the broad ligaments, and its base was so thick as to render any use of the clamp impossible. It was equally impossible to get at the appendages, since the fingers could not be passed between the tumour and the pelvic wall to a sufficient length even to feel the ovaries, which were lying at the bottom of Douglas's pouch. Finding these attempts of no use, I was about to close the abdomen and leave the case to nature, which would have been perhaps more advisable, when it was noticed that there was a distinct capsule to the myoma. This led me to do Martin's operation of enucleation. He begins by temporarily clamping the uterus with an elastic

ligature. This was absolutely impossible in the present case. I made an incision beginning above the bladder, which lay on the anterior wall of the tumour, and running in the middle line for about five or six inches. The myoma was then gradually enucleated, and bleeding vessels seized with forceps. Considerable portions of the muscular wall and the fibrous capsule were removed in trimming. This still left a large cavity, which did not, however, open into the uterine cavity. I filled this cavity with strips of iodoform gauze, and sutured it with deep and superficial interrupted sutures, but leaving the lower angle of the uterine wound open for the ends of the strips of gauze. The incision in the uterus was now sutured to the abdominal incision exactly as in performing ventro-fixation, except for the greater extent and for the gauze strips, which were left near the lower angle of the abdominal incision, having two abdominal sutures below them. The abdominal cavity had been carefully sponged out, and, in fact, there had been comparatively little bleeding. Gamgee's tissue was used as a dressing, and a binder put on.

It is perhaps better to remark here that there was but little tension upon the abdominal parietes, and that, if one may be allowed to say so, I felt very pleased with the general result of the operation, but not with its duration—two hours.

Her temperature and pulse before operation, at 8 a.m. were 98.2 and 110 respectively. On the eve of the operation they were 99.4 and 116. She was surrounded by hot water bottles after the operation, her temperature and pulse being 97 and 140. A warm normal saline enema containing an ounce of brandy and an ounce of beef tea was given at once, *i. e.*, at 11 a.m. and at 2 and 7 p.m. At 2.45 p.m. a hypodermic injection of a sixth of a grain of morphia and one hundred-and-twentieth grain of atropia was given. She slept four hours. Nutrient enemata were given at 12.40 a.m. and at 6.0 a.m. She was sick at 2.30 a.m. Temperature and pulse were on first day. 2 p.m., 96.4 and 128; 6 p.m. 98 and 134; 10 p.m., 99 and 132: second day, 2 a.m., 98 and 124; 6 a.m., 98.4 and 126. She was in

great pain, and a morphia suppository was given at 7.30 a.m. Because of her collapsed state she was allowed to drink champagne at 7.0 am. At 8 a.m., temperature 96, pulse 150. She died at 9 a.m., that is twenty-three hours after the operation. There was no hæmorrhage through the iodoform gauze drain

There was no *post mortem* made, which I regret exceedingly, because there is always the possibility of secondary hæmorrhage having been the cause of the fatal issue. This in my opinion is extremely improbable, because the whole uterine incision was brought firmly into apposition and then again fixed against the ventral incision in its full length, and this was done at the operation with the full view of forcing any bleeding to come through the abdominal incision since there was no drainage of the peritoneal cavity.

The long duration of the operation, combined with her cardiac and visceral degenerations (not physically found by myself, but proved to be present in all cases of long-continued repeated bleeding), brought her resisting and recuperative powers too low for anything more than a momentary reaction.

There was a great remedy untried, and that was saline infusion, by means of an aspirator reversed, between the scapulæ. I should have used this had she not seemed to react to the rectal infusions. Her death was sudden, and I think due to syncope after shock.

After writing the previous words, I have come to the conclusion that the patient died of failure of the vasomotor system to keep up the blood-pressure sufficiently for the heart to act—*i.e.*, the syncope was due to a kind of intra-vascular bleeding. No doubt that six pints of saline solution infused into the circulation through a vein would have been a very advisable and perhaps saving procedure.

It is not often that one meets with a case which has progressed to the stage in which this myoma was—*i.e.*, that the appendages are absolutely not to be touched by the fingers in the abdomen even with the aid of vaginal manipulation; or else castration was the treatment, had the case come earlier under

my care. What should I do if the same case occurred again? It is worth consideration whether some of the cases, in which the operation of castration cannot be performed from above, would not allow of castration through the posterior vaginal fornix. The great difficulties are the adhesion of the appendages, that they are often not in the pouch of Douglas, and that, as in this case, the cervix could not be drawn down to the vulval level. With a tumour so large, vaginal hysterectomy is out of the field. Total abdominal hysterectomy would have been an operation of extreme difficulty, owing to the situation of the tumour and the way it involved the broad ligaments. It could have been performed only by Péan's methods of morcellement and working from within the uterine mass. Under the same conditions, therefore, I should perform the same operation, but should hope to finish it in sixty to ninety minutes, or perhaps less ; and I should not waste time in trying to stop uterine oozing from the cut surfaces and the stitch-holes, but should go on as rapidly as possible. There was an excessively large cavity left after enucleation, even after trimming down its margins ; and for this there appears to be nothing better than the iodoform gauze, which could be drawn out afterwards. This might leave a large cavity in the uterus, but no doubt shrinking of the uterus and the growth of granulation tissue would soon obliterate the cavity.

The mortality of enucleation of myomata from the uterus is 25 per cent. Martin had three deaths in his first five cases and none in his last eleven cases. It is a conservative operation leaving the woman unmutilated. The manipulative difficulties are those of suturing uterine tissue and closing the gap left after removal of the tumour.

The colour of the tumour was that of myoma, its encapsulation was more like fibromyoma. "It was a pale flesh-coloured tumour having a soft consistence, and single," but not "passing gradually into the surrounding uterine wall." (Hart and Barbour, p. 403).

TWO CASES OF RETENTION OF THE PRODUCTS OF CONCEPTION BEYOND THE NATURAL TERM OF DELIVERY.

BY THOMAS WILSON, M.D., B.S. LOND., F.R.C.S. ENG.
ASSISTANT OBSTETRIC OFFICER TO THE GENERAL HOSPITAL. BIRMINGHAM.

Prolonged Gestation ; Transverse Presentation ; Version and Delivery of a macerated full-term Fœtus 318 days after conception. Fœtal retention beyond the natural term of delivery is as a rule due to extra-uterine pregnancy, or to the existence of some obstacle to delivery in the cervix, such as carcinoma. In most cases the symptoms of labour come on at the usual time and gradually die away, the fœtus perishing at the same time. The following patient gave no history of an abortive attempt at labour, nor of the fœtal movements having ceased to be felt at any particular time. The contracted pelvis appears to have been the cause, or an essential part of the cause, of the protracted retention.

Mrs. H., aged 39, was seen on July 31st, 1893, when she gave the history of having had labour pains for about four days ; the pains had been fairly frequent for thirty hours, and seven or eight hours before the visit something had protruded at the vulva, which had afterwards burst and allowed a discharge of a dirty blood-stained fluid. Mrs. H. was a tall bony woman, with broad hips, and the present was her third pregnancy. The first labour was difficult and prolonged, and ended in the birth of a boy, still-born ; the second, also very prolonged, ended in the birth of a girl, now living, and eight years old. The last monthly period occurred at the beginning of September, 1892, and the labour was calculated by herself and her usual medical attendant to be due in May ; the exact date in September on which the patient was poorly could not be given, but she was certain it was in the beginning of that month. Taking the sixteenth as the date, this would give the duration of pregnancy

from the last day of the last period as 318 days, or at least a month over the usual average time. At my visit the abdomen was found to be extremely prominent and overhanging the pubes; along a transverse line about the level of the umbilicus several small prominences could be felt—the foetal limbs; the long axis of the uterus was nearly transverse. On vaginal examination the cervix was dilated to a size large enough to admit three fingers, the cervical cavity was long; the broken edges of the membranes were felt, and as high as it was possible to reach the right shoulder was felt presenting, the foetus being in the abdomino-anterior position with the head in the right iliac fossa. No foetal heart could be heard, and from this fact, and the blood-stained liquor amnii which had been discharged, it was concluded that the foetus was dead. The woman's condition was good, although she complained of some fatigue. It was thought best to administer chloroform before attempting delivery, and while assistance was being sought to give the anæsthetic, the pains continued at intervals of ten minutes or so, and the right hand of the foetus prolapsed, confirming by its position the diagnosis previously made of the presentation.

Chloroform having been administered, and the patient being in the left lateral position, the left hand was introduced, the cervix easily dilated to admit it, and the lower, right, knee was seized; the pelvic brim seemed to be generally contracted. With a little difficulty the knee was brought down into the vagina, and the foot delivered. On traction the right hip came under the pubic arch, and after a fairly strong pull the breech, left leg, and body were delivered; the arms remained above the brim, but were easily delivered in the usual manner, the anterior first. On further drawing the breech forward to deliver the head, no very great force being used, there was a sudden alarming sensation as if all the joints in the foetal body had simultaneously given way; traction was therefore given up; expression and jaw traction then completed the delivery of the head. Thirty minims of extract of ergot were injected deeply into the buttock and the hand kept on the fundus. At about the third con-

traction the membranes and placenta were expressed, not quite entire, a few pieces having broken away from the surface of the placenta; the membranes had a peculiar heavy, offensive odour. The foetus was of large size, above the average at full term, and macerated. Two pints of 1 in 2000 corrosive sublimate solution were injected into the uterus. The patient made a perfectly afebrile recovery. The measurements of the pelvis were as follow:—True conjugate diameter $3\frac{3}{4}$ inches; Dist. Sp. Il. 10 inches (25 cm.); Dist. Cr. Il. $12\frac{3}{4}$ inches (32 cm.).

Fleshy Mole retained in utero until thirteen months after conception; mimicry of normal pregnancy.—Cases of fleshy mole in which the expulsion does not take place until after the natural term of pregnancy are not very common. In the following case death of the foetus, and probably its expulsion, took place at the third month of pregnancy, as proved by the mother's statements, by the observation of the symptoms of abortion with the uterus at the size usual at the third month of gestation, and, finally, by the expulsion of a three months' placenta infiltrated with blood nine months and a half later. The imitation of the continuance of normal pregnancy after the formation of the mole until near term is an interesting feature in the case, and one I do not remember to have seen mentioned in any previous similar case.

Mrs. S. D., æt. 32, was seen on the 21st of July, 1892, complaining of much loss of blood per vaginam for the preceding four days. The bleeding occurred in gushes, and there was no loss in the intervals. There were no pains. The patient stated that she was three months advanced in her second pregnancy, the first having ended in a tedious labour terminated by forceps two years and a half previously. On examination, the uterus was found to be enlarged to about the size of the third month of pregnancy, and the os not dilated. Rest in bed, and a mixture containing ergot were ordered, and five days later there had been no further loss of blood and no pains. Nothing but blood was stated to have been passed.

A month later, no further symptom having occurred, it was concluded, without further examination, that the pregnancy

would probably go on, and that labour might be expected in the last week of January, 1893. The patient went on increasing in size until the beginning of January, when she was seen by me in the street. At this time she had the appearance of being near the full term of pregnancy, and stated that she had felt something like the foetal movements in the preceding August, a month after the bleeding, but since then only something "like wind moving." The breasts had enlarged; there had been no vaginal discharge of any kind since the bleeding in July.

Mrs. D. was next seen on May 4th, 1893, when she stated that the abdomen had gradually become smaller since January. There had been no bleeding or other discharge until three weeks before, when a small loss of dirty watery fluid began, and has continued, becoming a little fresher in colour in the last few days. The breasts were now well developed, but the patient stated that there had not been any secretion. The uterus was found to be about the same size as when last examined in July, 1892; the os was patulous. Rest and ergot were again ordered, and continued until the 11th of May, when the patient was removed to hospital to have the uterus emptied of its contents. On the morning of the 13th the patient had strong bearing down pains lasting two hours and a half—the first pains which had occurred since the pregnancy began. Later in the day, under ether, an ovoid lump was removed from the vagina, into which it had been expelled by the pains. There was not the slightest trace of decomposition. The finger easily passed as far as the fundus, the uterine walls feeling flabby like wet leather, and not contracting. One or two rough places were felt on the inner surface, and were scraped away by the finger nail, the interior of the organ being then swabbed with glycerine and carbolic acid (equal parts) and the vagina well douched. There was a little bloody discharge for three days. The patient was discharged well on June 4th, has continued well since, and was delivered of a healthy child in September, 1894.

The ovoid lump was found, on examination, to consist of a

placenta and membranes of about the third month, compressed, the amniotic cavity containing numerous laminated rusty blood clots. No trace of a foetus could be observed. The villi appeared more opaque and striated and decidedly less vascular than usual. There were numerous hæmorrhages in the maternal portion.

MULTIPLE HEPATIC ABSCESS (PYÆMIC).

BY E. N. NASON, M.B., NUNEATON.

A. B., who first came under my care in the middle of September, 1891, gave the following history :—

For some eighteen months past he had suffered from a feeling of nausea after food, or on stooping, and could not bear any pressure over the epigastrium (as from tight garments), but had not actually vomited. Except for this, he had had no illness until June, 1891, when he had a bad attack of “influenza,” (?) and was laid up for fourteen days. At the end of this time, though he still felt very ill, he was advised to get up and go out. He at once had what he called a “relapse,” accompanied by a feeling of chilliness (? rigor), and followed by marked jaundice, and high temperature. He says he was treated for typhoid, but he apparently had no bowel symptoms, and nothing particularly pointing to that condition.

He had a diffuse pinky brown rash all over the body, lasting about a week, and soon after began to have repeated rigors and to lose strength and flesh. The jaundice, though less marked, persisted, and, in addition, a most troublesome hiccough began, and, with the before-mentioned symptoms, continued until he came under my care on September 20th.

His condition at that time was as follows :—There was much emaciation, while the complexion was earthy with a slight icteric tinge. The urine contained bile, but no albumen or sugar. The motions were of putty-like colour and consistence. He was suffering from persistent hiccough, which had lasted for more than a week, and was at times so severe and distressing

that the diaphragm seemed almost tetanised, and respiration was much interfered with. There was no general abdominal tenderness or distension, but there was marked fulness just beneath the ribs and considerable tenderness also, chiefly on the left side and in the epigastrium. The superficial abdominal veins were more evident than natural, especially on the right side. The liver dulness was little if at all increased, but there was considerable increase of dulness over the splenic area. No tumour could be felt, but pressure near the epigastrium increased the hiccough and caused much pain. There was slight oedema of both legs, and a suspicion of fluid in the flanks. Loud friction sounds could be heard along the upper edge of the liver, and reaching from the middle line to a little short of the axillary line. The right chest was dull posteriorly as high as the angle of the scapula, and the left for about two inches from the base of the lung. The physical signs were those of fluid. The breath-sounds elsewhere were healthy. The heart-sounds were natural, the pulse rapid and very small, the tongue furred and dry, and the breath had the peculiar odour of "sawn bone." The temperature was irregularly high, and there were repeated rigors. Asthenia was most marked. The symptoms seemed to point to either sub-diaphragmatic or hepatic abscess. The patient, however, would not consent to an exploratory operation.

The next morning the right chest was aspirated, and fifty ounces of clear fluid removed. The hiccough was at once relieved, but the pulse rose to 180 per minute and became alarmingly feeble. However, with the aid of stimulants, this condition passed off, and the next day the patient was much more comfortable. After a short interval the temperature again began to rise, rigors returned, and fluid again began to collect in the right chest. Towards the end of October seventy ounces of fluid were withdrawn from the right chest, with the result that the temperature became subnormal for four days. The hiccough, however, returned and was again most distressing, and the rigors again recurred at intervals. The friction-sounds

heard over the region of the liver became more marked than ever, as also did the tenderness beneath the ribs. The condition otherwise remained practically unaltered until Nov. 5th, when suddenly acute general peritonitis supervened, and death occurred the following day.

A partial *post mortem* only was allowed, and showed early acute general peritonitis with intense peri-hepatitis and perisplenitis with old and recent adhesions. The tissues at the back of the stomach were all matted together, but could be to some extent separated. The whole surface of the liver was studded with small abscesses, the largest containing about a drachm of greenish pus. They were evidently of pyæmic origin. The spleen was a good deal enlarged, and showed patches of lymph upon its surface. The kidneys were pale and small, but otherwise natural. There were no adhesions in the pleuræ, but the right lung was collapsed and compressed towards the spine from base to apex.

SARCOMA OF LOWER END OF FEMUR.

BY E. N. NASON, M.B., NUNEATON.

S. B., widow of the patient mentioned above, noticed in the following January (1892) that her left knee "failed her" occasionally when walking. A month later I examined the knee and found very slight synovial thickening and a small quantity of fluid in the joint. There was little or no pain, and I thought that the nursing of her husband through his long illness, which had necessitated much going up and down stairs, might be answerable for the condition, and ordered rest and the support of a bandage. The knee however did not improve under this treatment, and there seemed some slight increase in the lower end of the femur. I sent the patient to the General Hospital, Birmingham, where she was admitted, and the diagnosis made of chronic rheumatic arthritis. She remained an in-patient for some few weeks and had the knee blistered, but on her return was no better. She complained that the knee was becoming more painful, and it certainly had increased in size.

Soon after this the superficial veins began to be unduly evident and the lower end of the femur to increase more rapidly, so that I was led to suspect sarcoma. The temperature too began to rise and the patient to rather rapidly lose flesh. On examining the chest nothing abnormal was found, but an examination of the abdomen revealed two rounded, smooth, elastic tumours, one in either hypochondrium, deeply seated, but freely movable, of the existence of which the patient was quite unaware. The knee continued to enlarge (reaching 21 inches in circumference) as did also the abdominal growths, and the patient rapidly sank and died on November 18th, about ten months from the commencement of symptoms.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

A meeting of this Branch was held on Thursday, Feb. 14th, 1895, the President, Mr. H. LANGLEY BROWNE, in the chair. Present, thirty other members.

The following were elected members of the Branch:—

A. Arkwright, M.B. (Halesowen), William R. Reith, M.A., M.B. (Aston Infirmary), W. Richardson Rice, B.A., M.D. (Coventry), W. S. Robinson, L.R.C.P. Ed. (King's Heath), Robert Shiels, M.D. (Cape Hill, Birmingham), T. M. Tibbetts, M.B. (Cradley Heath), Swale Vincent, M.B. (Mason College).

Mr. Barling showed a girl upon whom he had operated for an appendical abscess opening into the bladder. The abscess was drained by incision through the abdomen, the appendix not being removed, and the patient is now quite well.

Mr. John W. Taylor showed the foetus, placenta, and remains of the right Fallopian tube, which he had removed by operation

two weeks previously from a case of ectopic gestation of three months' duration. This had been correctly diagnosed by Dr. Latimer Greene, of Stafford, previous to operation. The patient is doing well.

Mr. Jordan Lloyd showed a right kidney, weighing 2 lbs. 12 oz., successfully removed from a boy 8 years old, by combined abdominal and lumbar operation. His mother's attention was first called to the swelling through his complaining of pain, less than two weeks before coming under observation. The tumour filled the right lumbar, hypochondriac, and epigastric regions, and his temperature was raised. A few days after admission deep incision in the loin opened a cavity containing about 15 oz. of thick sweet pus; but, as the mass did not subside, some three months later the swelling was explored from the abdomen, found to be a renal tumour, and removed. The growth sprang from the hilum of the kidney, and consists of multiple cysts exactly resembling the congenital cystic hygroma met with in the neck and other parts of children. The pelvis was in front of the tumour, and the kidney was spread out and flattened on its outer surface.

Renal Calculus.—Mr. F. Marsh showed a calculus, weighing 123 grs., which he had removed by lumbar nephrotomy from the right ureteral orifice in a case of hydro-nephrosis. The patient, a woman of 50, had had symptoms of renal calculus for eight years, with intermittent attacks of hydro-nephrosis. Nephrotomy was preferred to nephrectomy because it was probable the obstructing calculus could be removed, and there were evidences of calculus in the other kidney. The patient was making a good recovery.

Mr. Bennett May read a paper on a case of pancreatic cyst treated by operation.

Dr. Carter read notes on the sterilisation of milk, and demonstrated a new sterilising apparatus.

PATHOLOGICAL AND CLINICAL SECTION.

The fourth meeting of the Session was held on February 22nd, 1895, the Chairman, Dr. MALINS, presiding.

Melanotic Sarcoma.—Dr. Carter showed a specimen of melanotic sarcoma of the pleura.

Cirrhosis of Liver.—Dr. Foxwell showed a multilobular cirrhotic liver weighing $5\frac{3}{4}$ lbs. taken from the body of a gentleman who had been a chronic drinker to excess of various forms of alcohol for a great number of years.

Ulcer of Stomach.—He also exhibited the stomach of a man of 74 which had a perforation the size of a threepenny-bit on the posterior surface of the smaller curvature near the pylorus. There was no evidence of recent ulceration, the walls of the ulcer being very smooth and fibrous, and greatly thickened; the floor had evidently been formed by the peritoneum alone. Death occurred within forty-eight hours. There was general purulent peritonitis.

Specimens.—Dr. Douglas Stanley showed a specimen of an aneurism of the right posterior aortic cusp. It was the size of a large pea, and bulged downwards and towards the lumen of the vessel.

Mr. Albert Lucas showed a specimen of a cured Aneurism of the common Femoral Artery. The patient was a feeble old man aged 58, who died of bronchitis and heart failure 101 days after ligation of the external iliac artery. Ballance and Edmunds' "stay knot" was used, and the material being stout catgut, no trace of the ligature could be found. The artery about the seat of ligation being converted into a firm fibrous cord. The aneurismal sac was filled with a firm laminated clot.

Dr. Kauffmann showed a specimen of Cancer of the Ovary, secondary to cancer of the rectum which had also caused secondary deposits in the liver. The disease occurred in an elderly woman whose uterus was the seat of multiple fibromyomas, one of which was very soft. The total mass in the upper part of the pelvis had blocked the sigmoid flexure and had

produced complete obstruction of the gut. On the way to the hospital the patient's great intestine was ruptured, and she died of faecal extravasation.

MIDLAND MEDICAL SOCIETY.

The fifth ordinary meeting of the Society was held on Wednesday evening, February 6th, the President, Mr. T. F. CHAVASSE, being in the chair.

Mr. Astley Prosser showed a patient with a number of growths in the subcutaneous tissue of both arms and thighs. The tumours which had been noticed for nine years were multiple, sessile, and varied in size from a pea to a small orange. The larger masses were tender and showed some signs of inflammation. The growths were probably myxofibromata or fibro-lipomata.

Rupture of Inner Coat of Femoral Artery. — Mr. Haslam showed a man aged 36, the upper part of whose left thigh had been crushed by the passage over it of the wheels of a railway delivery waggon. On admission, the upper part of the thigh was bruised, and there was a broad depression seen crossing the limb from just below the attachments of the adductor muscles to the pelvis, passing across the thigh below and parallel to Poupert's ligament, and just missing the anterior superior iliac spine. There was no fracture of bone, but no pulsation could be felt in the femoral artery or in the posterior tibial; the limb was cold and pale. The limb was elevated and kept warm, the collateral circulation proving equal to maintaining its vitality. There was never any sign of impeded venous return, nor was there any amount of extravasated blood at the seat of injury, and to these two facts the successful issue of the case is to be largely attributed. The diagnosis was a rupture of the inner and middle coats of the common femoral artery. The patient is now well and able to work, and a feeble pulsation can be felt in the posterior tibial artery. The accident occurred eleven [months ago.

Relapsed Talipes.—Mr. E. Luke Freer showed a patient 13 years of age, with double congenital talipes varus and pes cavus. The boy had been operated on when a year old, at which time there was considerable equinus. This had been cured, but owing to neglect of after treatment the varus had relapsed. The only operation now performed consisted of free subcutaneous division of the plantar fasciæ, with daily manipulations and massage. The boy now had both feet perfectly natural in their arches and no inversion. Mr. Freer instanced this case as showing how easily by orthopædic measures some of these apparently most severe relapsed cases of club foot can be rectified.

Compound Depressed Fracture of Skull with Paralysis of Right Arm and Leg, Left Side of Face, Aphasia and Paralysis of Soft Palate. Recovery.—Mr. Barling showed a boy, aged 11, who was admitted to the Birmingham General Hospital, April 14, 1894, with a very extensive compound depressed fracture of the right side of the head. He was deeply unconscious and was operated on without an anæsthetic, an area of depressed bone about $2\frac{1}{2}$ inches square being removed from the right side. From this, a fracture ran horizontally round the forehead and was lost in the bone of the left side of the head. A large quantity of blood was liberated by stripping the dura mater from the bone of the vault of the skull. The next day it was discovered that the right arm and leg were paralysed, and to some extent the left side of the face. The boy was still unconscious and remained so for eleven days, during which time he had to be fed with a nose tube.

On the 21st day he noticed things going on round him, shook hands when asked to do so, but with his left hand. He was unable to speak or to produce any sound except a grunt, and could not protrude his tongue. He could understand written and spoken words and could write with his left hand. The left side of the face was still inactive, but the right arm and leg were much better. On the 34th day he spoke for the first time, saying orange, yes, no, and his name very indistinctly, and

with a nasal twang, and it was then discovered that his soft palate was paralysed on both sides.

There was now steady improvement of the paralysed parts all round, and he was discharged eight weeks after the injury practically well. The wound healed by first intention and gave no trouble at all.

At the present time the boy is emotional and easily irritated, but the only distinct remnant of his various paralyses is a slightly nasal voice.

Post-Febrile Peripheral Paralysis.—Dr. Carter showed a man, aged 29, with complete paralysis and atrophy of the deltoid supra- and infra-spinatus muscles of the left shoulder. Four years ago he sustained some injury of that shoulder and adjacent part of neck from a fall, and up to an attack of small-pox last year, the limb had not been so strong as before the injury, but no marked wasting was observed. On his recovery from the attack of small-pox, which was very severe, he found that he had lost the power of raising his left arm. Neither of the above-mentioned muscles re-act either to Faradism or galvanism. Dr. Carter considered that the lesion was in the left anterior cornu of the cervical cord; and though directly due to the influence of small-pox, might possibly have some remote connection with the injury of four years ago.

Dr. Carter also showed a case of persistent brachialgia, in a man of 60 years of age, supervening on an injury to and amputation of the third finger upwards of a year ago.

Dr. Douglas Stanley then read a paper on an "Unusual Form of Anæmia." The subject of the paper is that form of disease frequently called Splenic Anæmia—a term which is likely to cause confusion. The cases are characterised by marked reduction in the number of red blood corpuscles, the white being unaltered or else reduced. There are frequently poikilocytes and even poikiloblasts present. The hæmoglobin is also reduced. The spleen is greatly increased in size, and the liver is frequently enlarged. There is no affection of the lymph glands. Marked asthenia, passing into marasmus, is

observed, and in some cases there is pigmentation of the skin which may occur in local patches, sometimes in a more diffused form over the abdomen.

The duration of the disease may extend over many years, and during its course there are acute attacks during which the patient is greatly prostrated, may become of a yellow olive colour, and the temperature may rise to 105° F., but showing great variation. During such an attack the urine becomes of a dark brown-red colour, and is found to contain large quantities of pathological urobilin. There is also a rapid fall in the number of red blood corpuscles, and the spleen may increase in size. There may be epistaxis, severe vomiting, and diarrhoea. When such an attack passes off, there is a slow restoration to the former condition. The pathological basis seems to consist in severe hæmolysis, probably due to the absorption of toxic products from the intestine. *Post mortem*, sclerosis of the spleen and pancreas was found, with marked changes (fibrous, cystic, etc.) in the supra-renals; the liver showed great pigmentation of the cells. The prognosis is always bad, although the duration may be long.

The treatment which has done most good seems to be intestinal antiseptis. Extract of supra-renals (freshly prepared) produced a marked increase in the number of red corpuscles.

REVIEWS.

THE EDINBURGH HOSPITAL REPORTS.*

THE second volume of these Reports in every way equals the first, and is a valuable collection of papers on Medicine, Surgery, and the allied subjects. The first article is on "The Edinburgh Royal Infirmary in the 'Fifties,'" and it is only necessary to say that the author is Prof. W. T. Gairdner, for it to claim careful

* The Edinburgh Hospital Reports, Vol. ii. London and Edinburgh: Young J. Pentland.

reading. It is full of memories and anecdotes of some of the most noteworthy men in the profession of medicine, and who have filled the foremost places, not only in their University, but in the scientific world.

Of the many and varied articles it is impossible to speak in detail. Dr. John Wyllie contributes a valuable paper on The Diagnostic Value of Patterns of Abdominal Tumidity. After describing the more common variations in the appearance of the abdomen in cases of intestinal obstruction, the author points out the fact that in many cases of chronic obstruction the whole intestine above the obstruction may from time to time exhibit variable peristaltic movement and stand up for half a minute in rigid spasm. When this occurs it is comparatively easy for the physician to determine where exactly the obstruction is situated, and the sign is one which should be carefully watched for.

Dr. Muirhead, in an article on Enteric Fever, strongly advocates the use of intestinal antiseptics in the treatment of that disease. He gives the preference to Benzonaphthol in sixteen-grain doses every four hours. If the patient is seen in the early stages, calomel in a five-grain dose may be given, "which may be repeated the next day, even if the bowels have acted rather sharply the first day." In the case of hospital patients we must be more cautious, for there is less guide as to what the stage of the disease may be. The author states that, in Edinburgh at any rate, constipation is the rule, diarrhœa the exception in Enteric.

There is an interesting article by Dr. Murray Leslie on a case of great enlargement of the spleen and liver with diminution of leucocytes, and to which he applies the term *Oligo-Leucocythæmia*. There is an account of the bulbar lesions in a case of Graves' disease, by Sir Thomas Grainger Stewart and Dr. G. A. Gibson. In the floor of the fourth ventricle a hæmorrhage was present. This seemed to have caused compression of the underlying nervous structures, and in these a large number of colloid bodies was found. The probable explanation is that these bodies take origin in a segmentation of the myelin sheath. No part of the sympathetic system showed any lesion.

In the present volume is one of the most complete accounts yet published of actinomycosis as occurring in man. The author, Dr. R. F. C. Leith, gives a very clear summary of the various views as to whether the clubs are organs of fructification or involution forms indicative of a degenerative process. The paper is beautifully illustrated. The same author has a paper on acute perforating ulcer of the stomach, which contains the result of very careful observations. There are several papers on neurological subjects which it is impossible to summarise here, but among which are "A Case of Nervous Disease," by Professor Grainger Stewart; Syringomyelia, by Mr. Alexis Thompson; Muscular Atrophy, by Dr. A. W. Stalker.

There are several interesting and important surgical papers, including "Electrolysis of Vascular Tumours," by Mr. Duncan; "Excision of the Sigmoid Flexure for Carcinoma," by Mr. James Hodsdon; and "Internal Derangement of the Knee Joint," by Mr. A. Logan Turner.

The present volume shows evidence of very careful editorial skill, and is a valuable addition to medical literature.

SPINAL CURVATURE AND AWKWARD DEPORTMENT.*

THE ninety pages of this little book are written in a "popular tone for the clearer comprehension of a wide circle of readers," inasmuch as the "physician is powerless to do much . . . without the co-operation of two powerful allies—the parent and the teacher." We have read the volume with pleasure. It is clearly and concisely written, and in the hands of any intelli-

* Spinal Curvature and Awkward Deportment: their Causes and Prevention in Children. By Dr. George Müller, Professor of Medicine and Orthopædics, Berlin. English edition, edited and adapted by Richard Greene, F.R.C.P. Edin. Illustrated. London: The Scientific Press Lim. 1894.

gent person having to do with the management and education of children, will doubtless prove of value.

The "causes of spinal abnormality" and the means by which it may be prevented are carefully and fully considered; and in illustration of the author's "thoroughness," we quote a few lines on "the hygienic consideration of the head covering." He says: "It should be light, and worn exactly on the middle of the head; for if the hat be heavier on the one side than the other, the head will incline to the heavier side, and will thus be in a position to favour a curvature of the cervical part of the spinal column!" Even before the "hat-wearing" period of a child's life is reached, we are told that attention must be given to the spine; and some of the author's instructions strike us as so amusing that we cannot refrain from quoting them. A daily bath of a precise temperature should be given during the early months of life, and "after the child is six months old, its back should be treated with cold massage. From nine months to one year, the back may be rubbed with a weak cold mixture of French brandy and water. After the fourth month, to make the bath more invigorating, an infusion of field cummin, sweet flag, and camomile may be used, producing an aromatic bath. From the sixth to the seventh month Strassfurt salt may be used, beginning with half a pound to a bath and increasing gradually till (when the child has reached its second year) three pounds may go to a bath!" Specialistic eccentricities of this kind do more harm than good in a work like this, as they tend to shake one's faith in an author's practical personal experience.

The second part of the book is devoted to the consideration of "special exercises for deportment at important periods of development," and will be found of real service. The volume is carefully illustrated, and in such manner as to make the leading points of the subject clear and intelligible.

PULSE-GAUGING.*

THE object of this monograph is to bring before the notice of the profession two instruments invented and used by their author for the purpose of gauging the calibre of the superficial arteries, and the tension or pressure of the pulse; and to record a very large number of observations made by their means. The value of the book is probably more scientific than clinical; for we cannot help doubting whether it can ever be worth while, as Dr. Oliver seems to think it may, to employ these instruments as practical aids in the diagnosis and treatment of disease. The facts elicited by the former instrument—the Arteriometer—are quite new, and Dr. Oliver appears to have definitely shown that certain variations in the calibre of the arteries normally accompany alterations in posture or external temperature, physical exercise, and the process of digestion; whilst failure in these physiological variations is known to occur in certain diseases, including chronic Bright's disease, myxœdema, and gout.

By means of the Pulse-Pressure Gauge various important facts with regard to the condition of the circulatory system can, so Dr. Oliver maintains, be ascertained—namely, “the mode and duration of the ventricular contraction, the amount of out-put, the condition of the arterial wall as to contraction or relaxation, the quantity of blood present in the arteries, and the degree of peripheral freedom or resistance.” Some of these facts are of course already demonstrable by means of the sphygmograph; but the author shows good reason for believing that his instrument, whilst far more reliable, is also more delicate, and capable of giving much more extended information than can be gained from any other instrument at present in use.

The book is obviously the outcome of much laborious and accurate work; and no one can fail to be struck with the com-

* Pulse-Gauging; A Clinical Study of Radical Measurement and Pulse-Pressure. By George Oliver, M.D. Lond., F.R.C.P. London: H. K. Lewis. 1895.

pleteness of Dr. Oliver's investigations. Both the instruments and the author's observations with their aid will prove of great value to those who are engaged in the scientific investigation of the phenomena of the pulse.

New Books, etc., Received.

Abdominal Tumours and Abdominal Dropsy in Women. By JAMES OLIVER, M.D., F.R.S. Edin., Physician to the Hospital for Women, London. London: J. and A. Churchill. 1895.

King's College Hospital Reports. Edited by Messrs. TIRARD, M.D.; WATSON CHEYNE, F.R.S.; JOHN PHILLIPS, M.D.; and W. D. HALLIBURTON, F.R.S. Vol. I., October 1st, 1893, to September 30th, 1894. London: Adlard and Son. 1895.

Text-Book of Diseases of the Kidneys and Urinary Organs. By Professor Dr. PAUL FURBRINGER, of Berlin. Translated from the German, with annotations, by W. H. GILBERT, M.D., Physician in Baden-Baden, etc.; in two volumes. Vol I. London: H. K. Lewis. 1895.

Manual for the Church Lads' Brigade Medical Staff Corps. The Church Lads' Brigade. London. 1895.

The General Hospital, Birmingham. 115th Annual Report. 1894.

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THE
BIRMINGHAM MEDICAL REVIEW.

MAY, 1895.

ORIGINAL COMMUNICATIONS.

THE SERUM TREATMENT OF DIPHTHERIA
AND TETANUS.*

BY GERMAN SIMS WOODHEAD, M.D., F.R.S.E.
DIRECTOR OF THE LABORATORIES OF THE ROYAL COLLEGES OF
PHYSICIANS (LOND.) AND SURGEONS (ENG.).

MR. PRESIDENT AND GENTLEMEN,

When I received your very kind invitation to give a paper before your Medical Society, with which are associated so many distinguished names, and whose traditions are worthily maintained by equally distinguished men, I, in the midst of somewhat exacting and sustained work, almost felt a desire to shirk a task which I knew must prove a difficult one; but a sense of the honour you had done me very quickly bore down any reluctance I might feel, and I now come to place before you the result of a somewhat prolonged and, I hope, careful study of the question of serum therapy; first, as gathered from the works of others, and secondly, as controlled by a number of observations of my own. To some of you I may have nothing new to tell; these must accept my statements as a corroboration of those they have already seen, from the fact that I have arrived at my conclusions, incomplete as they are, only after a careful sifting of facts and the performance of numerous experiments, by which I hoped to fill in certain gaps, or to add or confirm some detail.

* A Paper read at the meeting of the Midland Medical Society on April 3rd, 1895.

Some years ago, my colleague (Dr. Cartwright Wood) and I published a note on the antidotal and summative actions that the products of bacteria exert on the course of infective disease; whilst later, we contributed an article on bacterial therapeutics to the third volume of the laboratory reports issued by the Royal College of Physicians of Edinburgh. We there gave, as the result of our experiments, our conviction that a temporary immunity could be brought about, under certain conditions, by the inter-action of the products of two microbes, the blue pus bacillus and the anthrax bacillus. These, exerting their action through the cells of the animal, become antidotal to one another, the blue pus products appearing to antagonise the specific toxine of the anthrax bacillus, the latter being deprived of the weapon by means of which it held in check the germicidal action of the tissues, and falling a victim to the cells just as does an ordinary saprophyte. But we indicated that the tolerance to the poison was brought about through a change in the protoplasm of the cells, by virtue of which these cells had become more resistant to the poison. The antidotal action of the substance in this case, however, might be due to its power of stimulating into temporary activity that condition of the protoplasm which occurs in a more permanent state, where the cell has acquired a true tolerance. The production of a condition of tolerance to the poison, immunity, in a case already affected with the disease, was at that time considered to be possible only in such rare conditions as hydrophobia. There the knowledge of the precise time of the infection, the long period of incubation, and the restriction of the microbe almost exclusively to the nervous tissue, afforded advantages not attainable elsewhere. In other diseases of an infective nature the introduction of more specific poison in the hope of producing a tolerance, would, we should expect, only aggravate the disease. Our aim in the cases where the disease has already manifested itself must, therefore, be to antagonise the action of the specific poison, and to allow to come into play the normal reactive powers of the tissues. This need not be by the pro-

ducts of microbes, as in our present experiments, but by drugs, as has already perhaps been shown clinically by the action of quinine in malaria. From a consideration of the fact that a number of organisms (erysipelas, prodigiosus, pyocyaneus, etc.), which presumably produce different toxines, act antidotally, it would appear that this is not a very uncommon action, and we are sanguine that exact pharmacological research on the ptomaines and other products of the specific bacteria may perhaps indicate those drugs which will exert such antidotal action.

At that time we were not prepared to receive without reserve the startling statements since made that immune animals were provided with soluble materials circulating in the fluids of the body, which, acting on the cells of the body, render them capable of carrying on their functions in the presence of large quantities of specific poison—quantities which, under other conditions, would inevitably prove fatal to the organism; but we pointed out that the inter-immunity described might be explained either by the changes induced in the cells, which acquired a state of tolerance in part coinciding for the two poisons, or, owing to the principle of solidarity which governs the animal organism, the change produced by the one tolerance might indirectly affect other potentialities of the cells, in one case favouring the refractory condition, but in others perhaps rendering them more susceptible to the action of the new poison.

From this statement you will see that I was at that time prepared to receive the antitoxic serum treatment of diphtheria and tetanus with open arms. Then, however, arose the tuberculin question, which somewhat shook my faith, and I was led—and I believe that I was the first in this country to take up this position—to the conclusion, after careful observation and numerous experiments, that although tuberculin had under certain conditions a specific effect, we could not rely upon it as a therapeutic agent in our treatment of tuberculosis. So greatly was my faith shaken that I was for some time extremely sceptical as to the value of serum-therapy, and in the case of tetanus I looked

upon this special method of treatment as being a comparative failure, a statement that I even now make freely when applied to practical medicine, although the experimental evidence that can be adduced in favour of this method of treatment is very great indeed. In the case of diphtheria the results are so favourable that one was almost startled by the difference, and it became necessary to examine the position carefully. When the question is gone into and the clinical and experimental results obtained in the treatment of tetanus are placed side by side it is evident that we have an explanation of the success of the one and the failure of the other in the fact that in experimental tetanus the serum may be given before or immediately after the introduction of the toxine, whilst in the cases that come to us for treatment the toxine has been allowed to produce grave changes in certain important tissue elements before the disease can be said to have developed itself. In fact the mischief has been done before we are called upon to treat the patient. In the case of diphtheria, however, the marvellous success that has attended the serum treatment may be accounted for by the fact that we are called upon to treat the disease at the initial stage of the disease during the process of poison-production. Fortunately the presence of the diphtheria bacillus is manifested by the action of its poison on a sensitive mucous membrane, so that in the first stage of the disease the local lesion assumes far greater prominence than the general toxic symptoms, and we are therefore enabled to introduce the remedial serum into the system almost as soon as the poison can be absorbed from the local lesion, whilst, with the aid of cultivation and staining methods, it is possible, in a very large proportion of cases, to make absolutely certain of the presence of the diphtheria bacillus, at a very early stage, in cases of true diphtheria.

I cannot enter into detail concerning the history of the development of our present theories of immunity, but I may say that no single step in the advancement of serum-therapy as now practised, has been made until those previously made have been fully established.

In both diphtheria and tetanus the first real ground gained in this direction, was that specific micro-organisms, each bearing a distinct etiological relation to the specific disease with which it was associated were separated and described, first as regards their morphological, and then as to their general biological characters. Pure cultures were at length obtained, then came the discovery that the symptoms set up wherever these micro-organisms were allowed to act, were due apparently to the action of virulent poisons formed by these micro-organisms at the seat of their entrance into the body, and then diffused throughout the organism. The next step was in the direction of the production of immunity (*a*) to the action of the micro-organisms, (*b*) to the action of their poisons. It was found that by modifying the activity of the micro-organism, and then graduating the dose administered, certain kinds of animals became so accustomed to the presence of these micro-organisms that even virulent or non-modified organisms could thereafter be introduced into the body with impunity. As regards the second point, more definite and regular results were obtained. A small dose of the poison not sufficient to prove fatal to the animal gave rise, when introduced into the animal, to certain effects. After a certain interval had been allowed to elapse it was found that it required a larger dose to produce the same effects, and then a larger, and so on, the tissues gradually becoming poison-proof by a process of acclimatisation until enormous doses of the toxin were found to produce no manifest effect. Then arose the question, what is the rationale of this process? Are the alterations produced, situated in the solid or in the fluid constituents of the body? It soon became evident that both were more or less concerned, but following the observation that the normal serum of certain animals exerts a distinct bactericidal power, came the still more startling observation that the serum separated from the blood of animals rendered immune to diphtheria or to tetanus had acquired a wonderful power when injected into another animal of protecting and even curing the injected animal affected with one or other of these diseases. On this rests the whole system of serum-therapy.

The method now used, taking diphtheria as the example, is to render a large animal poison-proof by the injection of gradually increasing doses of an active diphtheria toxine; then serum separated from the blood of this animal is injected into the patient affected with the disease. This serum carries with it so much of the protective or curative powers of the poison-proof animal that the patient reaps some of the benefit, and if the remedy is given in time and in sufficiently large doses, he is cured.

[Details, illustrated by lantern slides and specimens, of the method of cultivation of the diphtheria bacillus and of the various methods of diagnosis were given, and then a short description of the manufacture of the diphtheria toxine.]

In connection with this it was insisted that the most important point to bear in mind was that the bacillus should be active, the long and rapidly multiplying forms apparently giving the best results. The medium generally used is a bouillon of distinctly alkaline reaction, to which two per cent. of peptone is added. A considerable quantity of a broth culture of the active bacillus is sown in the vessels in which the toxine is to be produced, and then the thin layer of fluid, though kept at rest as much as possible, has its surface fully ærated by means of a stream of moist warm air drawn over it. The nearer the bacillus is to the surface and the more equable the temperature -37° C.—is kept, the greater is the formation of toxin. At the end of a fortnight or three weeks, this culture is passed through a Pasteur-Chamberlain filter, by which the bacilli are kept back, only the toxine being allowed to go through. Toxine prepared in the manner indicated will be found to differ greatly in strength, even when made under apparently identical conditions, and even different flasks of the same batch are found to have very different poisonous properties. But when once the strength of any sample is known, the dose can be graduated with the utmost accuracy, and the process of immuniation, say of a horse, commenced.

A small dose, 1 or 2 c.c., injected under the skin of the neck

or just in front of the shoulder causes a rise in temperature and also a swelling of considerable size, these however soon disappear; a larger dose is then given, and so on until a dose of 200 or 250 c.c. produces no more effect than did the small first dose. As soon as this stage is reached the animal should be sufficiently protected and should have a serum of sufficient activity. If things have gone well, the state of the animal, as regards coat, general condition, and weight should have improved, in fact if no such improvement take place the serum will not be of much value. Of course the strength or activity of this serum is not the same in every animal and an elaborate method of testing *this strength has to be resorted to. So irregular was this at first that Arouson separated the active principle from the serum (as Roux and others had done in the case of tetanus antitoxic serum) and then dissolved it so as to make a solution of known strength. [The method of separating the serum from the blood clot was then described and illustrated by means of lantern slides.]

It is here scarcely necessary to go into the method of injection of the serum, but one thing I think should be insisted upon, and that is that where serum of sufficient activity can be obtained the "drug" should be pushed, *i.e.* where it is not necessary to give too large a volume to obtain the desired results. It is sometimes stated that albuminuria is a result of the exhibition of this serum, but those who have had the most extensive experience of its use maintain that albuminuria is a symptom which calls for the exhibition of still larger doses of the serum, and that under these larger doses the albuminuria gradually disappears.

The question of the ill effects of the serum is too complicated to take up here, but it may be stated, generally, that most of the evil effects ascribed to the action of the antitoxic serum are in reality associated with the diphtheria-toxia, and not with the antitoxic agent. The only exceptions to this are the pains

*See *Nature*, February 1st, 1895, p. 405.

in the joints and the transitory condition of erythema that follow the use of the serum. Most observers however are agreed that these conditions are really of little importance as they are seldom so severe as to give rise to much discomfort and moreover they usually pass off very quickly.

Now to return to the question of the different degrees of success that have been obtained in the treatment of diphtheria and tetanus. In diphtheria the early symptoms are purely local, the bacillus and its poisons are more or less localised with the result that the serum has the power of acting, prophylactically as it were, before the poison has had time to bring about organic changes, degenerations, etc., in the nerves and muscles; we find, therefore, that in the antitoxic serum treatment of diphtheria it is very important that the period of the disease at which the treatment is commenced should be taken into account, for experience has taught that the later the stages of the disease at which this serum is injected, the stronger or larger must be the dose given.

Behring recommends serum of 600 antitoxine units to be given in those cases in which treatment is commenced at the very outset of the disease—that is, when the first symptoms of diphtheria manifest themselves; serum of strength of 1000 antitoxine units for more advanced cases in which the prognosis is at all grave; whilst in still graver cases, and where the symptoms have been developed for some considerable time, it is often necessary to give a serum of 1500 units. It is necessary, therefore, to separate the cases in which the treatment has commenced at an early period, from those in which it is commenced only when the poison has had time to disorganise the tissues, and to render them incapable of reacting to the antitoxic serum.

The following table, given by Kossel, brings out the great importance of this element in keeping down the case mortality. In the first column is given the day of the illness on which antitoxic serum was first injected:—

Day of Illness.	Treated.	Died.	Percentage.
1	14	0	0.0
2	30	1	3.3
3	29	0	0.0
4	9	1	11.1
5	11	2	18.1
6	6	3	50.0
7	5	2	40.0
8	6	2	33.3
9	1	1	100.0
Unknown	6	1	16.6
	117	13	11.1

Much the same features have been observed in the experiments on tetanus. Here it is now generally recognised that after the subcutaneous injection of the tetanus bacillus or tetanus poison, the outbreak of general tetanus is preceded by the contraction of those muscles which lie next to the region of inoculation, and that this is due to the action of the tetanus poison on central nerve cells, in consequence of which they assume an increased and ever increasing excitability, the change taking place gradually but going on continuously so long as there is an absorption of the poison from the wound. It is recognised that the poison is conveyed to the nerve centres by the nerve trunks, and that it there acts on the ganglion cells, increasing their excitability and gradually covering a larger and larger area, but that there is, in addition, also a diffusion of the poison by means of the blood and lymph, as a result of which the general spasms become developed. Here, then, the poison is formed in the original wound, but when tetanus has set in there are profound organic changes in the spinal ganglion cells, and no amount of antitoxin injected can make good the ravages of the tetanus poison. In evidence of this let us take the following facts into consideration.

Ehrlich, Tizzoni and Cattani, experimenting with the rat and rabbit, and treating them with the blood serum of animals which

had been rendered refractory to tetanus, maintain that they were always able to obtain a cure if the injections were commenced as soon as the slightest symptoms manifested themselves. Where the local symptoms had become pronounced, or were beginning to disappear, the results obtained by the serum treatment in their hands were slower and less certain, whilst in those cases in which tetanus was already becoming generalised success never followed this treatment.

In the light of the somewhat unsuccessful use of antitoxic serum in tetanus in the human subject, it is interesting to find that the quantity of the serum that it is necessary to give in order to obtain successful results after local symptoms have commenced, is at least one or two thousand times greater than is the quantity required to confer immunity when injected before the tetanus bacillus is infected. This is a most remarkable fact, and one which should be borne in mind in determining the efficacy of the antitoxic serum method of treatment as applied to the various diseases in which it is used. Beyond this, however, it is calculated that it is necessary to employ a dose of serum at least one hundred and fifty times as great as the above, if any success is to be obtained in treating the disease when the local symptoms have reached their height.

Assuming that the experiments made on the rabbit can be applied to man, Tizzoni and Cattani calculate that it would be necessary to give 0.7 c.c. of the serum or 0.06 gramme of its alcoholic precipitate at the outbreak of the first symptoms of tetanus, whilst at a more advanced period it would be necessary to inject 210 c.c. of serum or 12 grammes of its precipitate. This is an exceedingly large quantity of serum to inject subcutaneously, and even this quantity, in actual practice, has failed to give anything like satisfactory results; in fact these observers were only able to obtain about the same percentage of recoveries as in cases of tetanus treated without serum.

Ricklin gives a table of the cases which have been treated with antitoxic serum. He here gives the age of the patient, the duration of the incubation period, date of the disease when treatment commenced, quantity of serum injected, antitoxic

strength of the same, the result, and the duration of the illness. It is gathered from this table that the cases of cure all belong to the chronic form of the disease, the benign form of tetanus, whilst those cases that ended fatally invariably developed in less than nine days; in the majority of cases, the duration of the disease not exceeding four or five days. In these cases, too, the period of incubation was comparatively brief.

It may be gathered that, so far, the success obtained by the antitoxic serum method of treatment of tetanus is comparatively slight, if, indeed, it can be argued that the success has been greater than that obtained by the ordinary methods of treatment.

If these facts are corroborated in connection of both these diseases, it follows that ere long some system of prophylaxis may do more for the stamping out of both diphtheria and tetanus than we are at present prepared to believe.

Now let us see what has been the case-mortality without and with the use of antitoxic serum.

During 1893 there were 13,694 cases of diphtheria notified in London, and the mortality amongst these cases was 3,195, or 23·3 per cent. To compare with the case-mortality in large well-found hospitals we will take the hospitals under the Metropolitan Asylums Board. The admissions in 1893 were 2,848, and the number of deaths 865, or 30·3 per cent.

Next take the reports of Messrs. Washbourn, Goodall, and Card of 72 cases with 14 deaths, or 19·4 per cent., with serum treatment, the average percentage of mortality for the hospital being 38·8 per cent.

Amongst the more important foreign statistics with regard to serum treatment may be cited the following:—

Kossel (Berlin) in 233 cases treated up to May, 1894, gives 54 deaths or 23·0 per cent., and in 117 cases treated from March, 15—Dec. 1, 1894, there were 13 deaths or 11·1 per cent., the average previous mortality being 34·7 per cent.

Aronson gives 255 cases with 31 deaths or 12·1 per cent., the previous mortality being 32·5–41·7 per cent.

Baginsky (Berlin) enumerates 303 cases with a mortality of 13·2 per cent., previous mortality 47·8 per cent.

Hahn (Berlin) gives 205 cases with 49 deaths or 24 per cent., previous mortality 40 per cent.

Wiederhofer, of Vienna, cites 100 cases with 24 deaths or 24 per cent., previous mortality 52·6 per cent.

Strahlmann gives a series of 100 cases with no death.

Ganghofner, of Prague, gives 110 cases with 14 deaths or 12·7 per cent., previous mortality 49 per cent.

Roux, Martin and Chaillou in Paris treated 448 cases and had 109 deaths or 24·5 per cent., previous mortality 57·7 per cent.

Moizard (Paris) cites 231 cases with 34 deaths or 14·7 per cent., previous mortality 50 per cent.

Lebreton (Paris) gives 242 cases with 28 deaths or 11·5 per cent.

(A series of complete statistical tables were here projected on the screen).

These statistics are of value only in so far as they indicate the general improvement that has taken place since the initiation of the serum treatment; but we are assured on all hands, by most of those who have had experience of the treatment of diphtheria by the older methods and also by the serum method, that the cases run a much more satisfactory course generally; even in grave cases, the symptoms are never so distressing—a most important point, as all who have had experience of cases of diphtheria are fully aware.

The results obtained by the serum treatment of diphtheria are so encouraging that I think it will be agreed that the future of serum-therapy is full of promise. A new field of investigation has been opened up, and a weapon, the full power of which we are still to a certain extent in a state of ignorance, has been placed in the hands of the physician. Pneumonia is the next disease to be attacked on this parallel, but it is extremely probable that other similar diseases may be treated by this method with at least some measure of success. I have attempted, in this brief and disconnected outline, to indicate merely the possibilities and the limitations of serum therapeutics as exemplified in their application to Diphtheria and to Tetanus.

ON SOME OF THE LESS COMMON DISEASES OF THE VULVA.

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(Continued from page 217).

VII.—VARIX OF THE LABIUM,

VARIX occurs more frequently in women than in men. Constipation, the prevailing vice of the sex, is largely responsible as a predisposing cause, and pregnancy, whenever it occurs, is apt either to start some varicose enlargement of the veins of the lower extremities or to greatly aggravate the disease when the latter is already present. But apart from these two causes there is probably no difference between the sexes in their liability to this affection. It is also highly probable that in many cases there must be some primary and congenital defect either in the valves of the veins, in the veins themselves, or in their anastomoses, which forms the essential cause of the disease. Only in this way can we explain the enormous varices which are occasionally met with in young persons who are otherwise quite healthy.

Perhaps we are inclined to under-estimate the trouble occasioned by varicose veins. Varix may be the cause of considerable pain of a dull aching character that brings with it a sense of fulness and a feeling of danger. This pain and discomfort may be sufficiently severe to prevent exercise and to incapacitate the patient for work, any exertion in the upright position being attended by some aggravation of the symptoms. Sometimes too a varix ruptures and life is lost, or nearly lost, from hæmorrhage.

Particularly do these observations apply to advanced varix of

the labium. For varicose veins of the leg, and especially for those below the knee, so much comfort can be obtained from mechanical support that but little else is needed; but when varix affects the upper part of the thigh and the external genitals the case is very different. The position forbids the application of a bandage, and any other external support is worse than useless. If the patient be a woman, young and married, the danger of a fresh pregnancy (which must inevitably increase the disease) is apt to cause serious apprehension, and when a pregnancy occurs, the engorgement and increased distension of the varix, the difficulty of walking or sitting, the danger of rupture—either externally, with free bleeding, or subcutaneously, with the formation of a thrombus—all combine to make the condition distressing to the patient and a source of special anxiety to her medical attendant.

Minor cases may be treated with more or less advantage by (a) regulation of the bowels and of the menstrual function when this is checked or scanty; (b) the avoidance of undue exertion or strain; and (c) a proper alternation of rest and exercise and of position; but when the veins are *always* visible, enlarged, tortuous, and prominent, milder measures are useless, decided treatment may well be demanded, and some operative procedure is usually necessary.

Various methods of operating have been advised and employed for the treatment of this affection—subcutaneous ligature, elastic ligature, ligature with division of veins, excision of limited portions of the varix, and finally complete excision of the varix, have all been advocated and adopted.

The question immediately arises—Which is the best operation to employ? I think that of *excision of the varix*.

In the first case in which I employed this method I did it as a matter of necessity, for it is only in quite recent years that the operation of excision of a varix has been undertaken as a matter of choice. The history of the case and of its treatment was as follows:—

Mrs. D., aged 28, having three children, the youngest of

whom was four years of age, was seen by me, in consultation, on May 17th, 1888. She had a large varix involving the right labium majus and extending to the "mons." The skin was very thin over it, and the bunch of blue distended veins beneath was large, prominent, tense, and painful. There was considerable varicosity on the upper part of the right thigh and on the hypogastric region of the abdomen, but at no place was the varix so marked as in the situation described.

The patient stated that she first noticed the swelling seven years before, that it had been steadily increasing in size ever since, and that latterly it had been attended by considerable pricking pain and discomfort. Occasionally the veins seemed to be on the very point of bursting, and an operation had already been advised. She was anxious to have this done if any improvement could be effected in her condition. It was pointed out to her that no local operation could cure the general tendency, but that the special varix in all probability could be removed.

On May 18th, assisted by Dr. Gilbert Smith and Dr. Whitby, I proceeded to operate by the method of elastic ligature advised by Mr. Lawson Tait in his book on Diseases of Women. I passed steel pins underneath the veins above and below the varix, compressing the veins against the pins by elastic in each situation. In this way every visible channel of blood communication with the varix was completely occluded. In spite of this, the varix continued to fill with blood; and not being satisfied as to the cause of this, I divided some of the veins on the varix side of the pins. The bleeding was copious, and it was evident that there was some branch or method of blood supply altogether uncontrolled by the pins. As I could not tell where this was, I determined to remove the varix altogether. The dilated veins were accordingly dissected out, the bleeding being stopped by catgut ligatures, and the whole varix was in this way completely removed. In the process of dissection I came across the supplying branches, which entered the varix on its under surface and found direct anastomosing connections

with the deeper veins. The bleeding was much less in quantity than I had anticipated, and there was no difficulty in removing the varix in the manner I have described. The incision was united with fine sutures, and healed without difficulty. When last heard of, the patient was quite well and had been greatly relieved by the operation.

Since this date, on the few occasions when I have had to operate for varix I have performed excision of the varix as the operation of election. In the following year (1889) Mr. Bennett, F.R.C.S., of St. George's Hospital, published several cases of varix in other parts of the body which he had treated in the same manner, and the operation is now, I believe, one of frequent occurrence. It should not, perhaps, be undertaken lightly; but whenever a superficial varix is sufficiently severe to demand an operation, the thorough removal of the disease is, in my opinion, the most surgical and therefore the best method of treatment. The operation should of course be absolutely aseptic. With this proviso there is but little danger. I have not had any untoward result in my operations. In one of these I removed some twelve inches or more of the saphena vein, but the course of recovery was uncomplicated and a-febrile. In some of the cases—perhaps in the greater number—the wound has not healed by “first intention.” This is hardly to be wondered at considering the thinness of the skin covering the varix and the prolonged dissection that is sometimes necessary to remove the disease. It forms, however, some drawback to the employment of the operation. Recovery is slow under these circumstances, and the patient may have to keep her bed for three or four weeks before the incision is soundly healed.

ÆTIOLOGY OF DISEASES.*

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THE excellent Robert Burton, in his "Anatomy of Melancholy," says: "'It is in vain to speak of cures, or think of remedies, until such times as we have considered of the causes,' so Galen prescribes Glauco; and the common experience of others confirms that those cures must be imperfect, lame, and to no purpose, wherein the causes have not first been searched, as Prosper Calenius well observes in his tract *de atrâ bile* to Cardinal Cæsius. Insomuch that 'Fernelius puts a kind of necessity in the knowledge of the causes, and without which it is impossible to cure or prevent any manner of disease.' Empirics may ease, and sometimes help, but not thoroughly root out; *sublatâ causâ tollitur effectus*, as the saying is, if the cause be removed, the effect is likewise vanquished. It is a most difficult thing (I confess) to be able to discern these causes whence they are, and in such variety to say what the beginning was."

Even though we do not go quite so far as this learned author, most of us, I think, are prepared to admit the importance of a knowledge of the causes of disease; for it is matter of common observation that where there is precision of knowledge of the cause of disease, there is corresponding directness and precision in our treatment of the disease, as in the cases of scurvy or lead-palsy. Though, at the same time, we must avoid falling into the pleasing belief that once discover the cause of a disease, the treatment is necessarily easy and effective; and must also recognise that precision of treatment may be attained in the absence of a knowledge of the cause of disease through other knowledge, as by a precise knowledge of morbid anatomy in

* A Paper read before the Queen's College Medical Society.

the case of gastric ulcer, or in the case of rheumatism, by a purely empirical knowledge.

The great extension of the science of preventive medicine in recent years is, again, a tribute to the importance of a knowledge of ætiology of disease, for preventive medicine begins with such a knowledge, and where that is absent, leaves us without its aid.

The object of this paper is to pass in review our knowledge and notions of whatever we may hold to be a cause of disease. And it may at once be confessed—it is indeed universally admitted—that our knowledge of this subject is small, and our ideas vague or shadowy. True it is that ætiology has its triumphs; let me instance the discovery of the cause of scurvy. But if there are a few instances in which we can assign to a disease a definite, precise, and invariable cause, there are far more in which we can only point to one or more factors as in some way connected with the appearance of the disease, whether essentially or accidentally we can scarcely tell; and there are many cases in which the most reliable authors prefer to vague speculations the frank admission that our ætiological knowledge is a blank. Let us illustrate each of these phases of knowledge by examples culled from a well-known text-book.

1. *Scurvy*.—Here the language is precise and definite. “By the middle of last century scurvy was proved, though not universally believed, to be caused by something wrong in diet. The inquiry has since been pushed further, and of all the constituents of healthy diet, the one of which the lack causes scurvy is now proved to be a due supply of *fresh vegetable food*. The question whether scurvy ever arises when a proper quantity of such food has been taken may be answered in the negative.” The only qualifying admission made to this statement, and that grudgingly, is “It is possible, however, that the development of the complaint is favoured by want of sunlight, residence in narrow, cold, dark, damp dwellings (such as cellars or the casemates of a fort), over-fatigue, excessive drinking.”

2. *Rheumatism*.—Here, unfortunately, all is changed. The

writer's confidence is gone, and he gropes about, telling us what is stated, or what is generally regarded, and doubting everything. "Cold," he says, "is generally regarded as the most frequent cause of acute rheumatism. But this is open to question." "The only efficient kind of cold is getting wet through." "Careful inquiry as to previous exposure to wet and cold has led to a negative statement in probably half the writer's patients: and there is no question that many, and perhaps the majority of cases of acute rheumatism are not due to any tangible exposure." Our author now goes into the question of what month in the year finds rheumatism most frequent; he gives his own statistics without comment, and says, "Dr. Archibald Garrod gives a series of similar observations by nine different writers in the fifth chapter of his recent work on 'Rheumatism,' and finds great discrepancy in the results." The geographical distribution of the disease next excites attention, but "is as yet too imperfectly known to enable one to state positively its bearings upon the question of its relation to climatic conditions." Muscular exertion we are told is, "according to some authors, an exciting cause of rheumatism." Hereditary predisposition is inquired into, and we are then told that "whether the disease is more apt to occur in persons of one *complexion* than in those of another is doubtful." "A very general impression is that most patients with rheumatic fever have light hair and grey eyes. But this applies to all diseases in England, because our population is chiefly xantho-chroic." Following this we have the fact that rheumatism not infrequently follows *scarlet fever*, and the statement that the *puerperal* state is also believed to bear a causal relation to rheumatic fever; and after discussing the bearing of sex and age, our author concludes—"On the whole we must confess that the causes of rheumatism are obscure. Practically all that can be said is that those who are young, those who are poor, and those who have suffered from it already are the most likely to be attacked by the disease."

3. *Psoriasis*.—Here again the language is plain and definite, as in the first instance. "The cause or causes of psoriasis are

absolutely unknown." Now it is with no idea of inviting your derision that I have given this picture of the state of our ætiological knowledge. The vagueness of our second illustration is perhaps almost as distressing as the blank ignorance of our third; but at the same time it must be clearly recognised that, until more precise knowledge comes, such statements as those made with regard to rheumatism have their value. It is not safe to reject any well-ascertained causal relation as trivial, for in some one of these diverse scraps of knowledge may be contained a fact which points the way to fuller knowledge of the disease. Hence it is that we find in our text-books and in our Dictionaries of Medicine under the head of "Ætiology" long lists of conditions, some known and approved causes of disease, and some whose connection with the subject seems as slight as their connection with one another.

To satisfy the theoretical requirements of ætiology we must be able to assign to each disease a definite cause or causes, and must understand the exact way in which the cause produces the disease. Unfortunately this latter requirement still further diminishes the number of diseases in our knowledge of the causation of which we can feel any satisfaction. Thus *scurvy*, instanced above, has been assigned to a definite cause, lack of fresh vegetable food, but we remain ignorant what constituent of fresh vegetable food is concerned in the matter, or in what way its withdrawal acts to produce the disease. In saying this I may be held to be assigning to ætiology a part of the province of pathology, but, of course, ætiology is itself but a department of pathology, and the full exposition of the production of diseases by causes must, I think, come within its scope.

Now before we can properly discuss the causes of disease it appears necessary to define, with some approach to accuracy, our idea of disease. The task is, however, one which presents considerable difficulties. Although we, no doubt, all know very well what we mean by disease, no generally accepted definition is to be found, and the attempts of authors of text-books in this direction too frequently demonstrate their caution rather than

their helpfulness. I have no reason to believe that I shall succeed where these angels fear to tread, and it is therefore only lest I should be held to have shirked an unpleasant duty that I have attempted to define disease as follows :—A bodily condition attended by continued pain, discomfort, deformity, or inability to perform the ordinary functions of mankind, or endangering or terminating existence. This for a definition of disease ; and were I asked to define *a* disease, I would say—A disease is a bodily condition or a sequence of bodily conditions attended by continued pain, discomfort, deformity, or inability to perform the ordinary functions of mankind, or endangering or terminating existence.

The definition of disease as a bodily condition reminds us that, apart from disease and within the limits of perfect health, the body is continually changing ; not only does the body of one individual present to us as regards liability to disease a problem different from that of another, but the same individual may at different periods of his life present absolutely different characteristics regarded as a subject for disease. One year he may be free from disease, and the student of ætiology may formulate certain ideas as to the possibility of his acquiring certain diseases ; twelve months later he may be equally free from disease, but the conclusions drawn regarding him may from an ætiological point of view have to be quite different. There are in fact two things to be reckoned with in the causation of disease ; (1) the body in which it is manifested ; (2) the external surroundings which affect that body.

Hence the portentous length of lists of causes of disease, for there is no *prima facie* reason why any change in the surroundings of man should not act as such a cause, while any influence to which he has ever been subjected may be brought in to explain the causation of disease, as having in some way moulded the tendencies of the body whose present condition is the disease in question.

At the same time we see a way to form a rough division of the causes of disease into two classes : (*a*) all influences which have

at any time contributed to make the individual more liable than the average to the development of disease or diseases ; (*b*) those which determine the actual occurrence of the particular bodily condition (disease) that may be under discussion. Those in the first group are what we have been accustomed to call predisposing causes : those in the second group we may call essential causes. It is to be noted that the same thing may act as a predisposing cause in some cases, and in other cases, usually in a more severe form, as an essential cause.

I now propose to consider, one by one, various factors which have been regarded as causes of diseases. Before doing so, let me utter a warning against rash conclusions as to the cause of disease. In no department of medicine are we in practice more prone, I think, to hasty judgment. A particularly unhappy tendency is that to assign as the cause of a disease some other disease of whose past or present existence in the patient there may be no particle of proof : the words rheumatic, gouty, strumous, occur to us at once in this connection. Another thing to be remembered is that complex causes of disease must be resolved into their component factors : rigid analysis of this kind will show that there are very few factors which can be accepted as approved essential causes of disease.

We will first consider such causes of disease as may, I think, be fairly called predisposing causes—those, viz., to repeat, which affect the body directly with regard to disease prior to the development of disease. And I may here exclude from the list circumstances which predispose to the disease simply by affording continued or frequent opportunities for the action of the essential causes, it being my intention to retain only factors which make one person, placed under exactly the same conditions as another, more likely to have a disease. The mere exposure to the causes of a disease cannot be properly reckoned a predisposing cause of the disease.

Race.—This, obviously, is about as far back as we can get in the search for predisposing causes. We have very little information on the point. The negro race is perhaps the most marked

separate race of which we have much knowledge. Of this, it is stated, that it is specially liable to smallpox, leprosy, tuberculosis, and cholera; while it enjoys almost complete immunity from yellow fever and, comparatively, from cancer and malaria, and is seldom attacked by diphtheria or dysentery. The yellow races, it is stated, are very prone to ophthalmia and myopia; and insanity is said to be relatively more common among them than other races. Among Europeans hysteria and insanity are said to be most marked in the Latin races; but in white races almost the only observations recorded relate to the Jewish race, which exhibits a special predisposition to diabetes and nervous disease; while, on the other hand, it appears to enjoy some measure of immunity from croup.

In the *British Medical Journal* of January 12th, 1895, the following conclusions are stated as being probable for the United States, now the great mixing-ground of races. (1) The coloured race is shorter-lived than the white, and has a very high infantile death-rate; it is specially liable to tuberculosis and pneumonia, and less liable than the white race to malaria, yellow fever, and cancer. (2) The Irish race has a rather low death-rate among its young children, but a very high one among adults, due, to a considerable extent, to the effects of tuberculosis, pneumonia, and alcoholism. (3) The Germans appear to be particularly liable to disorders of the digestive organs and to cancer. (4) The Jews have a low death-rate and a more than average longevity; they are less affected than other races by pneumonia, consumption, and alcoholism, but are especially liable to diabetes, locomotor ataxy, and certain other diseases of the nervous system. Allowing for the effects of different social customs, it thus seems probable that children of different races possess peculiarities which will make a difference in their tendency to develop diseases when exposed, under exactly similar circumstances, to the essential causes thereof, and which may therefore be called predisposing causes.

Heredity seems to come naturally next to *race*. It may be conceived to have an effect in various ways. (1) *Specific diseases*,

as variola or syphilis may be *transmitted*. Either the child may share in a disease contracted by the mother during pregnancy, or the sperm- or germ-cell may carry in itself the disease to be subsequently manifested in the course of development, either in utero or after birth. (2) There may be an inherited *immunity*, *i.e.*, the child may share with its parent an exceptional power of resisting certain essential causes of disease, as specific contagia. (3) There may be inherited *susceptibility* to some of the essential causes of disease, as specific contagia, certain poisons, cold. Both immunity and susceptibility may be general or local (confined to some tissue).

Of conditions frequently hereditary may be mentioned gout, the hæmorrhagic diathesis, pseudo-hypertrophic paralysis, Friedreich's disease, hay-fever, enuresis, many neuroses. The names of some of these remind us that hereditary diseases are not necessarily manifested in the parent as well as the child, but that this origin is very often indicated by the appearance of a disease in 2, 3, or more children of the same family, or by its having occurred in brothers or other relations of the father or mother.

Intermarriage may be considered in connection with heredity. It is widely supposed to be a potent source of disease. Idiocy, insanity, deaf-mutism are among the evils supposed to follow the marriage of first cousins and others of kin. The truth appears to be that hereditary influences are intensified by intermarriage. If therefore there is a tendency to disease in a family, the chances of its transmission are largely increased by intermarriage among its members. If, however, the family is a good healthy stock, the probability is that the offspring resulting from intermarriages will show no deterioration.

Idiosyncrasy also may here be mentioned. It has been defined as any peculiar and not obviously correlated reactions against external influences exhibited by any individual. The fact that these reactions sometimes amount to disease, bring it within the scope of our subject. It may be hereditary or otherwise. In the former case there is but a slight difference between it and

inherited susceptibility to disease. But the latter condition we regard as an exaggeration of a tendency shared by all for a certain disease to follow a certain cause or causes : in the former (idiosyncrasy), we recognise a liability to the development of disease as a result of certain influences, which leave the immense mass of mankind unaffected for evil, and are therefore not set down as causes of disease. Thus, "some patients are sure to be seized with asthma if they come near certain kinds of animals : cats, rabbits, dogs, horses, guinea pigs, etc." Eggs, honey, sugar or fish, may produce gastric pain, nausea or vomiting : strawberries, symptoms of intense nervous shock. We here prefer to lay stress on the predisposing cause, the idiosyncrasy of the patient, rather than the essential cause, the article of food, or the emanation from the animal, as the latter is with the great majority of people inoperative as an essential cause.

Imperfection of development may be hastily assigned as the cause of certain diseases, as the so-called morbus cæruleus of infants. It may of course come into play before birth, or at any time prior to that of the final development of the individual. It requires careful examination : in the instance mentioned, morbus cæruleus, it would appear to be not a cause, but a part of the disease, the cause having to be sought in some intra-uterine influence. It may be conceived that an imperfection of development of some part of the body may not be in itself a disease, but may, by creating a readiness to yield to some essential cause of disease, have to be reckoned among predisposing causes. Thus an undescended testicle is said to be especially liable to malignant disease.

Previous diseases.—These may leave the body, after recovery, and therefore not in a condition of disease, with different susceptibilities to the attacks of the essential causes of some diseases than before. These may be negative or positive ; thus an attack of small-pox confers a negative susceptibility amounting almost to immunity from the attacks of the essential cause of small-pox ; so also many other of the specific infectious diseases leave the patient after recovery with more or less complete

immunity from subsequent attacks. On the other hand, erysipelas seems, if anything, to leave those who have suffered from it more obnoxious than formerly to its attacks; rheumatism and chorea frequently recur. The readiness with which we admit instances of a disease leaving the patient after recovery more susceptible than the average to some other disease or diseases, will depend upon the strictness of our views with regard to sequelæ. Thus some may say that diphtheria leaves patients very susceptible to a form of paralysis, and scarlet fever to nephritis, but a majority would probably prefer to regard both these conditions as part of the former disease in each case. That acute rheumatism leaves children predisposed to chorea is however a generally acknowledged fact, and a good instance of a disease leaving a patient, though in health, with a decided increase in his liability to attacks of another, quite different, disease. *Diathesis* may here be mentioned: it is defined by Mr. Hutchinson as any bodily condition, however induced, in virtue of which the individual is, through a long period, or usually through the whole life, prone to suffer from some peculiar type of disease. Diathesis is not itself a disease, the term may be used when its subject seems perfectly well. If the diatheses possess any features that would bring them under our definition of disease, such features cannot be discerned by any means we possess. A diathesis does not cause pain, discomfort, deformity, or inability to perform the ordinary functions of mankind, nor apparently does it in itself endanger existence.

Pathological tissue-changes from previous diseases carry with them liability to many other forms of disease, but the chain of events being continuous, with no interval of real health, though there may be an appearance of health, we must exclude these pathological changes as separate predisposing causes of disease.

Temperament has frequently been regarded as carrying with it special liabilities to disease, or some modifying power over disease. Were the various temperaments more sharply defined, more easily recognised, and less liable to be confused with the results of actual disease, we might with more readiness investi-

gate their relation to disease. Temperament is not in itself either a predisposing or exciting cause of disease.

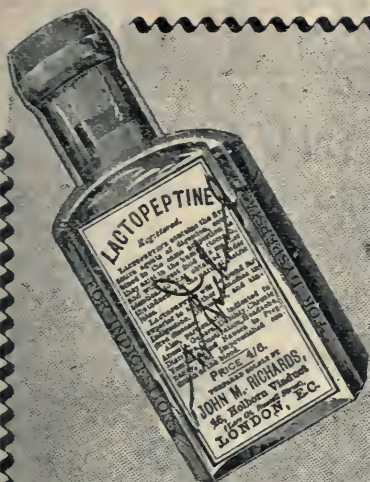
Age has, of course, very definite predisposing relations to disease. The allocation of certain diseases to certain periods of life is in some cases almost accidental. Measles is mostly a disease of childhood, because all children are exposed to the cause of measles, and nearly all yield to those causes; but there is nothing specific in youth that makes it susceptible to measles. So adults only suffer from delirium tremens, because until adolescence is reached we are restrained from approaching the cause of that malady. The real diseases of youth are those which depend for their development on the incomplete growth of the body. Thus rickets is essentially a disease of extreme youth, because its cause fails to produce the disease when the growth of the bones is complete. In infancy and childhood the nervous system is rapidly developing, and therefore unstable and liable to disease: hence many nervous disorders are almost peculiar to childhood. As adult life is reached differentiation of tissue becomes more and more marked, hence a cause which in a child lighted up disease, almost over its whole body, or through the whole length of its alimentary canal, now has its effects limited to some special tissue. Old age is marked by the appearance of degenerations in the tissues, themselves certainly diseases, and on account of which the aged succumb to insignificant exciting causes.

Sex.—The female frame is less able than the male to withstand exposure and strain. Hence a condition of debility predisposing to disease is more readily induced in women. They more readily succumb to mechanical or mental strain. Differences of dress, of mode of life, of occupation, no doubt account for the observed differences in the liability of the two sexes to various diseases in many cases. Although there is inherent in the sexes a difference of predisposition, yet there are few diseases, if any, which are the exclusive privilege of either sex, though hysteria and chlorosis are almost confined to women. From the point of view of disease you may regard woman only as more delicate man,

possessing however in her reproductive organs a wider field for the attacks of disease than is presented by the similar system in man.

The foregoing conditions appear to me to be worthy of being grouped together as predisposing severally to some particular disease or diseases. Let me now add to them one which predisposes to disease in general, which increases the susceptibility to the attacks of any pathogenic agent. I mean *debility*. For the inclusion of this I may be challenged on the ground that debility is itself a disease. But though I would admit that the condition of debility following some actual disease may very properly be regarded as part of the attack, yet I feel equally certain that such a condition may exist unmanifested by any such signs as would entitle us to call it a disease, and without having been preceded by any actual illness. That the condition itself when extreme is entitled to rank as a substantive disease does not, if admitted, impair this proposition; and, moreover, I am inclined to think that the debility when so marked will be found to be only a part of the bodily condition which exists and merits the name of a disease. We are indeed here brought face to face with the fact that our statements are comparative only. Conditions which we must still call health merge gradually into others which we must call disease. Hence the difficulty of drawing a dividing line and defining disease. The admission of debility as a predisposing cause of disease considerably extends our list of such factors. For many are the causes contributing to its generation. Briefly they are those which have been called hygienic—insufficient food, improper clothing, impure air, insufficient sunlight, want of exercise, overwork, worry, etc.

Passing on now to essential causes we may put down first—*Mechanical Force* exerted in pressure, tearing or breaking, or irritation. With the force acting from outside we get all the ordinary traumatic conditions. The force may however be generated within the body, and is then no less a potent source of disease. Thus violent muscular efforts lead to increased



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pressure within the arterial system, which may result in aneurism, valvular injury, cardiac dilatation, etc.

Chemical Forces are seen at work in the production of disease in the action of poisons. The ordinary animal, vegetable, and inorganic poisons call for little comment. There are, however, certain forms of poisoning of peculiar interest—viz., cadaveric, fæcal, and septic—*cadaveric*, by substances derived from the decomposition of dead bodies; *fæcal*, by substances derived from decomposing fæcal matter; *septic*, by substances derived from a part of the living body which is undergoing decomposition. These decompositions are always associated with the presence of micro-organisms, which do not, however, themselves constitute the poison. The poisons are certain of the chemical products resulting from decomposition, among which products may be mentioned numerous amine bases, indol and skatol, tyrosine, and a number of fixed alkaloidal bases called ptomaines. The interesting point is whether substances of this nature, which must be generally or always present in the intestinal contents, may not—by abnormal absorption, failure of normal excretion, abnormal production, or failure of normal destruction—be the cause of some of the diseases whose ætiology is at present a mystery.

Thermal Force also undoubtedly causes disease. Extreme heat locally of course causes burns and scalds; extreme cold a very similar condition. Intense radiant heat will cause meningitis or sunstroke. Short of its local effects extreme heat appears to be well borne, but after a certain time a condition of heat-apoplexy follows. The influence of cold and chill in the causation of disease requires careful consideration. They form the most overworked item in popular ætiology; and among physicians also have from time to time been pressed into service to explain almost everything. We should beware of attempting to explain too much by their aid, as by so doing we may be delaying the discovery of a more satisfactory cause. In no disease, perhaps, are they more relied upon than in rheumatism; yet we have seen how cautiously their influence in the causation

of this disease is spoken of by responsible authors. It is, however, certain that cold has a powerful depressant effect on the body generally, and may of itself cause death, possibly by simply lowering the temperature of the body, and also that exposure to cold may cause inflammations of certain serous membranes and internal organs. Cold air is undoubtedly an irritant to the mucous membranes with which it comes in contact. Cold is more decided and dangerous in its effects when associated with damp and wet. The manner in which it acts is uncertain. It may interfere with the circulation; may affect the extremities of nerves, and excite disease by reflex action; or it may check secretions of the skin, the mucous membranes, and other parts. According to Payne, "the most plausible explanation is that of Rosenthal, that disease from cold happens when the skin is very full of blood from exposure to heat or excessive heat-production, and is then cooled rapidly, so that there is a great difference in the temperature of the blood in the skin and that of the blood in internal parts. At the same time, the cutaneous vessels contract, and thus masses of cooled blood are thrown in upon the internal organs, of which the lungs are, for obvious reasons, most likely to suffer."

Electrical Force, in the form of the powerful induced currents used for electric lighting as well as lightning stroke, may cause death. Short of this, severe shock is, I believe, the only morbid condition attributed to this source.

Vital Organisms as the cause of disease have long been known. They are animal; epizoa, living on the surface of the body, as the *acarus scabiei*, and entozoa, dwelling within, as the hydatid; or vegetable, epiphytes and entophytes. To these latter, microbes or germs as they have been called, scientific attention has been lately directed almost to the exclusion of other causes of disease. As a popular explanation, they have pushed out of court the various diatheses, and almost suppressed cold and wet as an explanation of disease. And yet, in the last few months, an eminent specialist has expressed his disbelief in their pathogenic power, and his conviction that

germs are the result, not the cause of disease. It is not within the scope of my paper to give you an account of germs or defend the germ theory of disease, so far as there is such a thing. But that the existence of definite pathogenic germs has been proved absolutely may be regarded as an incontrovertible fact. I quote from Fagge the stringent conditions which, he says, "justify our regarding a given organism as the material cause, the contagium vivum, of a given malady :—

(1) The malady must have such distinct and constant features, whether clinical or anatomical, as shall enable it to be identified.

(2) The microphyte must be itself distinguishable from others by its size and shape, its staining properties, but above all by its mode of propagation in 'a pure cultivation' (*i.e.*, artificially separated from other organisms), and the form and colour of the colonies it produces.

(3) The organism thus identified must occur in the blood or tissues—not merely on the surface, cutaneous or intestinal, but below the epithelium, in the lymph-spaces or blood-vessels,—in every case of the disease in question.

(4) It must not occur in the human body except in cases of the particular disease in question. It may, however, conceivably exist in other animals, without giving rise to the same pathological symptoms; or in air or water—as it exists in the test-tubes and plates of 'pure cultivations,'—and in whatever media convey the contagion from one person to another.

(5) When a pure cultivation of the organism is introduced into the blood and tissues of an animal, the phenomena, clinical and anatomical, of the disease in question must be reproduced.

These conditions in all their rigor have been satisfied in the case of Anthrax, and with scarcely less abundant proof in that of Relapsing Fever."

Diet.—Excess of food, want of food, and neglect of proper proportion of the elements of food, all cause disease. Substances taken as food may, in smaller or larger doses, act as poisons, *e.g.*, alcohol. The development of ptomaines from over-kept food may be mentioned in this connection. A specific dietetic cause

is the withholding of some special kind of food, as, in the case of scurvy, of fresh vegetable food. Similarly, rickets is probably due to the withholding of fat from the dietary ; but this cause only acts in this way in children.

Overwork.—Up to a certain point, use of an organ improves its condition, but further use, overwork, impairs it, atrophy, or sometimes inflammation being the result. Thus overwork of some part of the body becomes an essential cause of disease, as we see perhaps in general paralysis, some of the systemic diseases of the spinal cord, and the diseases called hyperkinetic, together with the more simple case of pharyngitis or laryngitis caused by overuse of the voice.

Mental influences are undoubted causes of disease, mainly the emotions, as fright, grief, shock, and the vague condition known as worry. They seem to act most readily on the nervous tissues, but also increase the susceptibility of the body generally to disease ; herein they act as predisposing causes. The influence of mental impressions on distant organs is shown in the case of acute yellow atrophy of the liver, on the nervous system in chorea, and ideal paralysis. Imitation also leads to the development of some nervous diseases.

Heredity may be the only discoverable cause of a disease and must therefore be admitted in practice among essential causes.

In here closing my list of causes, I may no doubt lay myself open to charges of omission. For instance, I have not mentioned climate or occupation, either as predisposing or essential causes of disease. Each of these when analysed will be found, I think, to contain only factors of disease already discussed. Thus the effect of climate is mainly a question of the greater or less operation of cold and wet, altitude being perhaps the only specific factor ; occupation is a cause of disease either by exposing to the action of poisons, mechanical irritants, cold and wet, overwork, or non-hygienic conditions. So it will be found, I hope, that I have made no important omission, though anything like completeness is out of the question.

I have not concerned myself with vague speculations where we have no knowledge; thus I have said nothing of the cause of cancer, or of diabetes, or the atrophy of the thyroid gland, which with its secondary consequences constitutes myxœdema. What I have tried to do is to present you with a review of the known causes of disease, and to point out that they require subjection to rigid analysis, after which we may find them capable of some natural arrangement.

REPORTS OF CASES.

A CASE OF CEREBRAL HÆMORRHAGE.

BY W. A. MARRIS, M.B.

HOUSE-PHYSICIAN TO THE GENERAL HOSPITAL.

T. R., aged 70, was admitted to the General Hospital, on January 29th, under the care of Dr. Rickards. He had fallen forward insensible while lifting some heavy bags out of a cart. When seen at the hospital an hour later, he was completely unconscious, with stertorous respiration and flaccid cheeks. On rubbing the chest, he moved his arms slightly and groaned, but could not be further roused. The left side of the face seemed drawn a little upwards, and there was slight external squint of the right eye. The pupils were moderately contracted, equal, and insensitive to light. The conjunctival reflex was absent. All the limbs offered a certain and equal amount of resistance to passive movement. The bladder being full, a catheter was passed and twenty-five ounces of urine were drawn off. It contained no albumen, had spec. grav. 1020, and contained a fair quantity of sugar.

Five hours later the breathing was still stertorous but slow (eight respirations per minute), and had taken on the Cheyne-Stokes rhythm. Respiration was carried on by the diaphragm,

the intercostal and thoracic muscles not being used. No squint and no inequality in the facial muscles could now be detected. There was an occasional movement of internal rotation of the extended arms, but otherwise the limbs were in the same state as before. The knee-jerks were normal, there was no ankle clonus, and the plantar reflexes were both absent. The catheter was again passed, and twenty-eight ounces of urine drawn off. It still contained sugar, but no acetone, and there was no smell of acetone about the patient's breath. He remained in the same condition through the next day, the pulse and respiration gradually failing till he died, thirty-six hours after admission.

At the *post mortem* examination a large hæmorrhage was found in the left cerebral hemisphere, which had ruptured into the lateral ventricle, and, passing down through the third ventricle and iter, had burst out of the fourth ventricle so as to compress the pons and medulla as well as the third to seventh cranial nerves on both sides.

Glycosuria in gross cerebral lesions is rare ; and its presence in this case, together with the imperfect history at first obtained, led to the diagnosis of diabetic coma. On further examination in the ward, the character of the respiration and general aspect of the patient, and the history of sudden onset, readily suggested cerebral hæmorrhage. The localisation of the hæmorrhage was, however, difficult. There were no unilateral signs whatever, the strabismus was quite temporary, the facial nerves were equally involved, as were the limbs, and there was no conjugate deviation of head or eyes. On the other hand, the contraction of the pupils, Cheyne-Stokes respiration, failure of deglutition, polyuria (28 oz. being secreted in five hours), and glycosuria led to the belief that the mischief was about the medulla ; and there is little doubt that the pressure of the blood which had found its way to this part was the cause of the symptoms. The glycosuria may of course have been present before the hæmorrhage occurred, being of the gouty type and producing no symptoms. The patient's sons, however, knew nothing of any kidney disease on their father's part, and, though

working with him, had noticed no frequency of micturition. His body was muscular and well nourished. Though gouty glycosuria therefore cannot be absolutely denied in this case, it seems more probable that the sugar in the urine was caused, like the polyuria, by disturbance of the medullary centres.

PERISCOPE.

URINARY AND RENAL DISEASES.

BY ROBERT SAUNDBY, M.D. EDIN., F.R.C.P. LOND.
 PROFESSOR OF MEDICINE IN MASON COLLEGE;
 PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

DIABETES.

G. Hoppe-Seyler. *Beitrag zur Kenntniss der Beziehungen der Erkrankung des Pankreas und seiner Gefäße zum Diabetes mellitus. Deutsches Archiv f. k. Med.* Band 52, Heft 1-2, p. 171.—A case of diabetes in a woman aged 57, in whom softening of the brain occurred, followed soon after by her death. The pancreas was large, weighing 300 grammes, and had undergone almost complete fatty transformation; its arteries were narrowed and thickened and the veins dilated. Under the microscope some remains of pancreatic tissue could be seen, but the nuclei of the cells did not stain, and the connective tissue about the ducts was increased; in parts there were islands of connective tissue apparently replacing glandular tissue.

He also refers to a case of diabetes insipidus with transitory glycosuria in which the pancreas was fatty and cirrhotic and shows traces of hæmorrhage into its substance. Also to a case of hæmorrhage into the pancreas without any glycosuria, at least he does not mention it. He gives an imperfect summary of the literature of this subject.

E. Hédou. *Influence de la piqûre du plancher du quatrième*

ventricule chez les animaux rendus diabétiques par l'extirpation du pancréas. Archives de physiologie, 5th series, Vol. vi, p. 269. Hédon has performed a series of experiments on dogs rendered diabetic by extirpation of the pancreas in order to determine the effect of puncture of the floor of the fourth ventricle under these conditions. The results were uniformly to show that after the latter procedure the glycosuria increased considerably in amount, generally by thirty or forty per cent., sometimes more.

Morat and Dufour. *Les nerfs glyco-sécréteurs. Archives de physiologie*, 5th series, Vol. vi., p. 371.—The authors have endeavoured to prove by a series of experiments on animals that glycogenesis in the liver is the result not of vaso-motor disturbance, but of the direct influence of secretory nerves.

R. J. Williamson. *The Condition of the Pancreas in fourteen consecutive cases of Diabetes Mellitus. The Lancet*, 1894, Vol i., p. 927.—This paper really contains brief notes of fifteen cases of diabetes, in all but two of which there was marked emaciation; the pancreas was normal in seven, atrophied in four, cirrhotic in four; in two of the atrophied cases fatty degeneration was present.

Hausemann. *The Pancreas in Diabetes. Int. Med. Congress. Brit. Med. Journal*, 1894, Vol. i., p. 796.—Professor Hausemann estimated the frequency of the association of pancreatic disease with diabetes at 50 per cent., the most frequent lesion being simple atrophy.

Thirolloix. *Influence du régime alimentaire sur la production du Diabète expérimentale. Le Prog. Méd.*, 1894, Vol. i., p. 286.—Thirolloix states that an animal which has fasted for a week is rendered diabetic by puncture of the floor of the fourth ventricle, but not by extirpation of the pancreas [as if the pancreas could only affect hydrocarbons on their way from the intestine, while the puncture directly stimulates hepatic glyco-genesis.—Rep.].

Fleiner. *Zur Pathologie der calculösen und arterio-sclerolischen Pankreascirrhose und der entsprechenden Diabetesformen. Berl. klin. Woch.*, 1894, Nos. 1 and 2.—The author relates

two cases to illustrate the pathology of pancreatic diabetes. In the first, the patient suffered from cardialgia, subsequently diagnosed as pancreatic colic; but four months before his death he developed symptoms of diabetes. At the autopsy the pancreas was found cirrhotic and atrophied, while its duct was filled with calculi. In the second case, the patient had suffered for six years from attacks of pain, attributed to gallstones. Five months before her death the symptoms of diabetes supervened, and at the autopsy the pancreas was atrophied and cirrhotic. In both cases there was marked endarteritis of the vessels of the gland. He attributes the lesion primarily to the vascular change; but the main point is that the diabetes did not supervene until the disease had destroyed the whole of the glandular tissue of the pancreas.

Kauffmann. *Mécanisme du diabète pancréatique. Le Progrès Méd.*, 1894, Vol. i., pp. 191, 223, 285.—Kauffmann states that suppression of the function of the liver diminishes the glycaemia in dogs made artificially diabetic as well as in healthy dogs. The hyperglycaemia therefore depends upon a function of the liver and not upon diminished destruction in the tissues. But the pancreas normally exercises a controlling influence over the glycogenic function of the liver, so that when the pancreas is removed, hyperglycaemia or even glycosuria results. This occurs even when all the nerves to the liver are divided, proving that the pancreas acts by means of its internal secretion, which passes in the circulation to the liver, and limits its glycogenic function.

Solomon Solis-Cohen. *Lævulose and Strontium Bromide in the treatment of Diabetes Mellitus, with three illustrative cases. International Clinics*, Vol. iv., Series iii., 1894.—The author recommends strontium bromide, in thirty-grain doses, three times a day in obese and gouty patients, in whom however most remedies have a fair measure of success. He gave lævulose without harm. The dose permitted was one ounce daily.

R. Saundby. *A case of Diabetes treated by Lævulose. International Clinics*, Vol. iv., Series iii., p. 78.—The case was one

of moderately acute diabetes in a boy of 14, the amount of lævulose from an ounce to an ounce and a half daily, and the result was no increase in excretion of sugar or urine, while the patient gained weight, improved in general health, and very much appreciated the addition to his diet.

Monin. *Traitement du Diabète. Le Progrès Méd.*, 1894, Vol. i., p. 265.—Monin recommends permanganate of potash and maté (Paraguayan tea). He says the permanganate possesses an alterative action upon the liver cells and regenerates the hæmatoblasts, while maté is trophic and neurosthenic, owing to its abundant salts of potash and magnesia and combined choline. Yet it is in the comparatively benign form of hepatic or gouty diabetes that these powerful remedies are able to manifest their efficacy, although they are far from useless in nervous and pancreatic diabetes "so commonly regarded as beyond the reach of remedies."

R. J. Williamson. *Changes in the posterior columns of the spinal cord in Diabetes Mellitus. Brit. Med. Journal*, 1894, Vol. i., p. 398.—In these two cases there were no signs or symptoms during life to point to disease of the posterior columns. The first had some wasting of the muscles about the shoulders and some tingling of the fingers, but definite anæsthesia or analgesia, his knee jerks were at first absent but afterwards returned. In the second case the knee jerks were persistently absent, and during the last few days of life there were slight pains in the legs, chiefly about the ankles and soles of the feet. In the former case the spinal cord, after hardening on Müller's fluid, exhibited to the naked eye marked pallor of the posterior columns in the lower dorsal region, confined to the posterior median columns in the lower cervical region and to their posterior two-thirds higher up; but under the microscope there was very little increase of neuroglia or atrophy of nerve tissue, though a few fibres were swollen or degenerated, and the myeline in places reduced. The nerve cells were generally pigmented, and in parts—chiefly those of the inner group—atrophied. The nerve fibres going to the atrophied

muscles were quite normal. In the second case the appearances were practically the same. In three other cases of diabetes they were looked for, but were not found. These changes, which have been before described by Sandmeyer and Leyden, resemble the conditions observed in pernicious anæmia by Minnich. The author compares them to the early stages of sclerosis, described by Tooth, six days after section of the cord. It is notable that in the second case the knee jerks were absent, but the branches of the anterior crural nerve to the rectus femoris were quite healthy; however, in this case the pallor of the cord and the evidences of slight degeneration began as low down as the middle lumbar region, and may be regarded as accounting for the loss of knee jerks.

K. Grube. *Ueber das Verhalten des Patellar-reflexes bei Diabetes mellitus. Neurol. Cbl.*, 1893, No. 22.—Grube has tested the state of the patellar reflex in 131 cases of diabetes, and found it normal in 113, increased in 5, diminished in 13. Of the latter four were severe cases and nine were slight, so that he concludes that it has no prognostic significance.

H. Hildebrandt. *Ueber eine Wirkung der Piperazin und seinen Einfluss auf den experimentellen Diabetes. Berl. klin. Wochr.*, 1894, No. 6.—Hildebrandt recommends piperazin in diabetes, mainly on theoretical grounds, as this drug diminishes the activity of diastatic ferments without lessening the alkalinity of the body fluids. He obtained good results in phloridzin diabetes of dogs, but apparently has not used it in any case of human diabetes.

W. Hale White. *On the Effect of giving Lævulose and Inulin to patients suffering from Diabetes mellitus. Guy's Hosp. Rep.*, Vol. 50, p. 132.—The author alludes to the experiments of Minkowski on dogs rendered diabetic by extirpation of the pancreas which showed that lævulose and inulin are largely stored up or utilised in the organism of such animals and are not for the most part excreted as sugar. In 1874 Kulz had shown that inulin and lævulose were assimilated by diabetics, and more

recently the subject has been taken up by Prof. Leyden, who has used a preparation of lævulose made by Schering and Glätz, of Berlin. Experiments on diabetics showed that from 20 to 60 grammes of this sugar could be taken daily without increasing the excretion of sugar. Hale White has used this lævulose and the treacle-like substance sold by Allen and Hanbury; he has also given inulin in the form of dahlia tubers, which contain about 10 per cent. of this form of starch. They should be boiled for about four hours. He found that the lævulose was excreted in part at least as such, the total amount of sugar was always increased, while the quantity of urine was generally augmented. The quantity of lævulose given was from 200 to 1800 grains daily, and the amount of sugar excreted was not proportionately increased, so that he believes some of the lævulose was retained and utilised; it in no case did any harm, and in some instances was followed by gain of weight and general improvement. On the other hand, dextrose and cane sugar though sometimes not followed by bad results often did harm.

C. Manchot. *Ueber Melliturie nach Chloralamid*. *Virchow's Archiv*, Bd. 136, Heft 2, p. 368.—It has been long known that the urine of patients taking chloral may reduce Fehling's solution, and Schmiedeberg and Meyer showed that this is in some cases glycuronic acid; but Levinstein* proved that true glycosuria may occur, the sugar fermenting and rotating polarised light. Manchot, in the present paper, relates two cases in which chloralamide was followed by glycosuria, proved by fermentation and the phenyl-hydrazine test; but the dose was very large—from 6 to 9 grammes (90 to 135 grains). Experiments on a rabbit weighing 2,150 grammes showed that glycosuria did not occur until the dose reached 1.75 grammes (26 grains), equal to a dose of 900 grains for a man. The glycosuria is transitory in both animals and men, and the dose required is obviously very large.

* Zur Pathologie der acuten Morphinum- und acuten Chloral-vergiftungen. *Berl. klin. Woch.*, 1876, No. 27.

BRIGHT'S DISEASE.

C. A. Hertee. *A Critical Review of the various theories of Uræmia based upon original experimental observations.* New York Neurological Society. *The Medical Week*, Vol. 2, p. 195.—The author criticises somewhat superficially the various theories that have been put forward, except that relating to urea, which he appears to adopt, at least so far as certain gastrointestinal phenomena are concerned. These he has produced in animals by introducing pure urea into their circulation, so that he considers that vomiting and diarrhoea in kidney diseases are due to the specific effects of urea; but he cannot offer any explanation of the cerebral symptoms.

Teissier and Frenkel. *Treatment of Bright's Disease with Renal Extract.* *The Lancet*, 1894, Vol. i., p. 1405.—The Paris correspondent of the *Lancet* reports that MM. Teissier and Frenkel, of Lyons, have been experimenting with renal extract in the treatment of chronic nephritis. The extract was made by triturating kidney substance with a ten per cent. mixture of glycerine and water. The extract is injected subcutaneously, and the dose employed was 2 cc. once, and afterwards twice daily. The result was said to be improvement in the general condition of the patient with increased toxicity of the urine.

MISCELLANEOUS.

Lee Dickinson. *Transient Hæmoglobinuria from Muscular Exertion.* *The Lancet*, 1894, Vol. i., p. 1249.—At a meeting of the Clinical Society three instances of transient hæmoglobinuria were described in healthy young men, in two instances after foot races, in the other after a game of lawn tennis. The blood was healthy. No reference to possible chilling of the surface after the exercise is made by the reporter.

G. M. Sternberg. *The Bacteriology of Pyelo-nephritis.* *Cong. of Amer. Phys. and Surg.* *The Med. Week*, Vol. ii., p. 292.—Ascending nephritis or pyelo-nephritis is often secondary to long-standing cystitis. The bacillus coli communis is found in these cases more frequently than any other organism. Occa-

sionally it may be due to the presence of other organisms, but in the great majority it is due to the one above named.

Hurry Fenwick. *Cholesterine Cyst of Kidney*. The *Lancet*, 1894, Vol. i., p. 23.—At a meeting of the Pathological Society a sacculated kidney was shown, in which the ureter was partially obstructed by a calculus. The cyst was an enormously dilated calyx shut off from the cavity of the renal pelvis, and containing a large quantity of clear fluid glittering with crystals of cholesterine.

L. Emmett Holt. *Acute Pyelitis in Infancy*. Congress of American Physicians and Surgeons. The *Medical Week*, Vol. ii., No. 26.—The author relates three cases of acute pyelitis in young infants, which supervened without apparent cause and were attended by high fever, and pus in the urine. All recovered after some weeks. In the discussion which followed, doubts were expressed as to the diagnosis, and it was suggested that neither cystitis nor suppurative nephritis had been excluded. The urine seems to have been acid, and to have been free from excess of mucus.

T. Harris. *Method of Preserving Organic Urinary Deposits*. The *Lancet*, 1894, Vol. i., p. 1,140—A preservative fluid consisting of potassium acetate, sixty grammes; chloroform, ten cubic centimetres; distilled water, one litre; is poured into a tube, five-eighths of an inch in diameter, of which the lower end is drawn out like a burette; the sediment is taken up with a pipette and dropped into the top of the tube, which is then closed with an indiarubber cork. The sediment settles to the bottom of the tube, and can be forced out into a glass cell by pressure on the cork; the cell must then be hermetically sealed. Such preparations have lasted two years without change.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The sixth meeting of the session was held on Thursday, March 14th, 1895. Present: The President, Mr. H. LANGLEY BROWNE, in the chair, and 28 other members.

The following were elected members of the Branch:—Matthew Johnston, L.R.C.P., M.R.C.S., of Bewdley; H. W. Pooler, L.R.C.P., M.R.C.S., of Great Brook Street, Birmingham; and W. A. Marris, M.B., of the General Hospital, Birmingham.

It was resolved that the warm sympathy of this Branch be expressed to the Cork Branch in the course it has taken with regard to medical clubs and societies.

Nominations were received for the posts of President-elect, Treasurer, Honorary Secretaries, Council, and Representatives in the Council of the Association.

The following living cases were shown.

Temporal Sphenoidal Abscess.—Mr. F. Marsh showed a man, æt. 30, whom he had trephined for abscess of the temporo-sphenoidal lobes on January 19th. The patient had made a rapid recovery. Detailed notes will be published.

Laryngeal Stenosis Cured by Intubation.—The patient, a boy aged 4, was admitted under the care of Dr. Malet with urgent symptoms of laryngeal obstruction of a week's duration, for which Mr. Cholmeley immediately performed tracheotomy. The isthmus of the thyroid being high up, it was found necessary to divide the cricoid. He progressed favourably, without pyrexia, but was quite dependent on the tracheal tube. A fort-

night later an attempt was made to pass a laryngeal probe and intubation tube, but the glottis was funnel-shaped and would not admit it. The probe could however be passed through the tracheal wound and through the larynx, and he could then cough through the larynx, but not inspire.

About seven weeks later, his condition being nearly the same, Mr. Cholmeley passed a small Lister's sound into the larynx through the tracheal wound, and dilated the larynx up until he could introduce the smallest intubation tube. This was changed in a week for the next size, the tracheal wound having healed, and the full size, for a four-years-old child, inserted three days afterwards, which he wore for three weeks, being removed for cleaning once a week. On final removal he could breathe quite readily through the larynx, and phonate loudly.

For a month there has been no recurrence of symptoms, and he appears to be quite cured of absolute dependence upon a tracheotomy-tube.

Congenital Inguinal Hernia; radical cure.—Mr. J. T. J. Morrison showed a man, aged 32, on whom he had operated twelve days previously for a swelling of the left half of scrotum and corresponding inguinal canal. Patient had for many years thought the left testicle was larger than the right, but the enlargement gave rise to no inconvenience. About four months before admission, after unusual exertion, the swelling became larger and continued to increase for several weeks, a dull pain, intensified by manipulation of the parts, being experienced at the same time. He was positive that the increase of size took place gradually and not suddenly. The bowels were regular, and the general health remained good. The swelling was as large as a medium-sized cocoanut, pyriform, elastic, non-translucent, and covered by uninflamed skin. There was an obscure impulse on coughing, and the swelling presented irregularities of surface suggestive of omentum. Mr. Morrison considered the possibility of new growth of the testis, but thought the evidence was against that view, his diagnosis being omental hernia, and probably a thickened tunica vaginalis.

At the operation, on March 2nd, a tightly-packed mass of great omentum, weighing 14 oz., was removed from a congenital inguinal sac, in which it lay in contact with the compressed testis. After reduction of the ligatured omental stump, the sac was stripped from the canal and tied at the internal ring. Finally, the redundant part of the sac was removed, and the edges of the lower portion united by a continuous catgut suture so as to constitute an artificial tunica vaginalis. The wound healed very quickly, and the patient was shown in excellent health.

Mr. J. W. Taylor read a paper on a case of Loretta's operation.

PATHOLOGICAL AND CLINICAL SECTION.

The Fifth Ordinary Meeting was held in the Medical Institute on Friday, March 29th, 1895, the Chairman, Dr. MALINS, presiding.

Dr. Codd showed three specimens.

Case 1. *Apparent Myxœdema*, with hæmorrhage into centrum ovale and aneurism of internal carotid close to bifurcation into anterior and middle cerebral. Admitted under Dr. Totherick with history of failing memory, difficulty in performing simple actions, and in speech, sensation of cold in extremities, and swelling of face. Symptoms of six months' duration. The face was of myxœdema type, with thick swollen eyelids and lips. Hands not affected. No cerebral signs noted. Kept in bed without treatment for observation. On the fifth day after admission had twitchings in left arm and face, became unconscious and soon died.

On removing the brain, an aneurism of the left internal carotid artery was seen, just as it emerged through the dura mater by the anterior clinoid processes. It was cut across in removal. The posterior perforated spot and optic tracts were pressed out flat through distension of the third ventricle. The lateral and

fourth ventricles and the iter were also distended with blood. The greater part of the white substance of the right frontal lobes was occupied by a large hæmorrhage which had burst into the anterior cornu of the right lateral ventricle, and the right caudate nucleus was pushed back. The basal arteries of the brain and the aorta were atheromatous. The radials and posterior tibials, though thick, were not. The pituitary was of normal size and did not appear to have suffered naked-eye change. The thyroid was of normal size and appearance, but on section was seen to present excess of cellular element.

In view of Dr. Audriezen's researches on the morphology and function of the pituitary body, that it acts during embryonic life like the molluscan osphradia, secreting a substance to influence the nutrition of the primitive nerve tube, and that even in adult life it still exercised a trophic influence on the nervous system, it seems reasonable to suppose that this aneurism, pressing upon the pituitary body, interfered with its function and so produced the symptoms referred to.

Case 2. *Cirrhosis of Liver* of conglomerate form in a boy aged 13, admitted under Dr. Malet; and it was stated that he had always had an enlarged abdomen, and that his voice was never clear. Six days before admission he began to have cough and anorexia, but then improved; but on being brought up from Willenhall in a tram, was affected by severe dyspnœa. On admission, it was noted in addition that he was hoarse, but had no stridor. The abdomen was very large, and contained much fluid. Liver and spleen enlarged. Consolidation at right base. Two pints and a half of fluid withdrawn from abdomen immediately.

On the third day after admission, developed laryngeal stridor with obstruction, for which Mr. Cholmeley performed tracheotomy with only partial relief, and he died next morning.

Post mortem, the larynx was œdematous, and no membrane was present. There was hepatisation of the lower lobe of the right lung. Spleen weighed 18 ozs. Liver weighed 3 lbs., and presented a number of very deep sulci lying between many

well-marked knobs or projections. The surfaces of these latter were quite smooth, and the whole organ had a fanciful resemblance to a conglomerate stone, or an ovarian multiple cyst. The right and left lobes were united by a very narrow isthmus. On section, lobular cirrhosis was found, with proliferation of bile ducts, great engorgement of hepatic capillaries, and advanced fatty degeneration. There was no history of alcohol, but as his mother was a very disreputable character, it is likely that he might have been brought up on spirits, and that supposing him to have had originally the pot-belly of rickets with hepatic and splenic enlargement, and that cirrhosis followed on the rickety enlargement, this sequence may have determined the planes of contraction to take place as they had done in this case, instead of as they do in hobnailed liver.

Case 3. Another example of cirrhotic change in young people, being kidneys removed on the previous evening from a girl, aged 14, showing advanced cirrhosis, weighing $1\frac{1}{2}$ oz. each. The girl was stated never to have been ill until a week before admission, when I saw her as out-patient complaining of anæmic symptoms. The day before admission she developed uræmic dyspnœa, and on admission had scanty urine with five per cent. urea, and died the following day.

Bilharzia Hæmatobia.—Dr. Douglas Stanley read notes of a case of bilharzia. The patient was a man, aged 26, who had lived for two years at Port Elizabeth. A year after his arrival he was attacked by a skin eruption, which he compared to nettle stings. Shortly after, he began to pass blood in the urine. He had always been careful about his food and drink, but was fond of bathing. This he did in the sea, the nearest fresh water being a half-mile off—a small river. The water supply of Port Elizabeth was always considered good.

Dr. Stanley gave a short account of the life history, and anatomy of the bilharzia, and one with microscopic specimens.

Carcinoma of Larynx.—Dr. Foxwell showed a larynx infiltrated with a carcinomatous growth which had originated in the left ventricular band. The sub-maxillary glands formed a mass

the size of an adult fist. There were no secondary growths. He was admitted for urgent dyspnoea, for which tracheotomy was done, but death came six hours later.

Mr. John W. Taylor read notes of a case of operation for Acute and General Purulent Peritonitis due to perforation of the appendix or cæcum with fæcal extravasation. The abdomen was thoroughly washed out and drained in two situations—the cæcal region from the right flank, and the pelvis from the middle line. The patient made a good recovery.

Mr. Taylor also showed a specimen of Myoma weighing 2 lbs. and 6 oz. which he had removed the same day by “morcellement.” The tumour reached for some distance above the umbilicus, but was contained within the dilated vagina. The patient was virginal and the growth had begun to ulcerate.

Professor Allen read a note on “Some effects of Borax as an Adulteration in Milk.”

Dr. Short showed a specimen of Hæmorrhage under the Mucous Membrane of the Bladder.

Mr. Morrison showed a patient on whom he had successfully operated for the radical cure of an Umbilical Hernia.

Mr. Eales showed a man aged 42, with œdema of the conjunctiva of the right eye only of two years’ duration, which had not been amenable to any treatment.

MIDLAND MEDICAL SOCIETY.

An ordinary meeting of the Midland Medical Society was held on Wednesday, March 6th, Mr. T. F. CHAVASSE, F.R.C.S., President, in the chair.

Cerebral Hæmorrhage with Unusual Symptoms.—Dr. Marris showed the brain from a case of cerebral hæmorrhage which was under the care of Dr. Rickards at the General Hospital. A large hæmorrhage in the left hemisphere had burst into the lateral ventricle and passed down to the medulla. The symptoms were apoplexy, slight rigidity of all limbs with occasional

unconscious movements, no strabismus, facial muscles equally inactive, inability to swallow, Cheyne-Stokes respiration, equally contracted pupils, polyuria, and glycosuria. The case was first diagnosed as diabetic coma, and subsequently as hæmorrhage into pons or medulla.

Myoma of the Uterus.—Mr. Chavasse showed a uterine myoma, weighing 9 lbs., which he had removed by abdominal section from an unmarried woman aged 35. The history of growth extended back four years. Numerous adhesions existed, and the pedicle, which was broad, was treated extra-peritoneally by a wire constrictor. Recovery was uninterrupted.

Papillomata of the Larynx.—Mr. George Heaton showed a boy, ætat. 12, with a large valvular growth growing from his left false cord and causing much inspiratory dyspnœa. In addition to the main growth, there were several smaller ones growing from the mucous membrane in the interarytenoid space. The boy had suffered from frequently recurring attacks of croup, and a year previously had had tracheotomy performed for laryngeal obstruction, and wore a tube twelve days. Mr. Heaton proposed to remove the growths by a laryngotomy, and gave his reasons for performing this method.

Dr. Foxwell exhibited a man with a new growth, originating in the posterior mediastinum, which had compressed the main bronchus of the right lung and also that supplying the lowest lobe. The superficial veins of the lower half of the thorax were dilated, especially on the left side, probably from pressure on the smaller azygos as it crosses the spine to join the larger. There was also a large mass of glands in the right supra-clavicular fossa. The first symptom of ill-health was noticed at the end of November, 1894.

Dr. Foxwell also showed a boy of 3 with a large liver of very dense consistence, which he considered to be cirrhotic owing to alcohol with which he had been regularly dosed by his parents—spirits as well as beer.

Dr. Leslie Phillips showed three patients. 1. A case of chronic pemphigus of eight months' duration, noteworthy from

the very small size of the great majority of its bullæ. 2. A case of phagadænic ulceration of the penis in course of repair after the free application of the Paquelin cautery. And 3. A man discharged from the army in India on account of syphilis. One side of the nose had been lost nineteen months after the primary sore, and much destructive ulceration had attacked the lesions in other parts of the skin. The exhibitor directed attention to the occurrence in his practice at the present time of many cases of syphilis of a severe and intractable type.

Mr. Christopher Martin showed a large sarcoma of the left ovary, successfully removed six weeks previously at the Women's Hospital. The chief clinical features pointing to a diagnosis of sarcoma were—1. The age of the patient (28 years). 2. The rapid painless development of a smooth, elastic, semi-solid mass rising out of the pelvis and springing from the left side of the uterus. 3. The progressive emaciation during the period of growth (eight weeks). 4. The presence of free ascitic fluid in the peritoneal cavity. 5. The marked vascularity of the growth, as shown by the bruit heard on auscultation, pulsation felt on vaginal examination. An hour after the operation Mr. Martin had to re-open the abdomen and re-tie the pedicle, the ligature having slipped. Although put back to bed pulseless, she rallied well and made an otherwise excellent recovery.

Dr. Kauffmann read a paper on "Some Considerations on the Etiology of Tumours." After considering the chief theories of tumour-growth—the embryonic and the parasitic—and the difficulties which suggested themselves in the application of each of these theories, Dr. Kauffmann came to the conclusion that the embryonic theory, as propounded by Cohnheim, was the one which most enforcedly explains the phenomena of the growth and structure of tumours. He further pointed out that an advance in knowledge regarding the etiology of tumours might be looked for in the study of their chemistry.

A discussion followed, in which the President and several members joined.

REVIEWS.

THE ANTISEPTIC TREATMENT OF WOUNDS.*

WE have read this volume with interest as it embodies probably the most recent views of our leading German contemporaries upon the perennial and all important subject of wound treatment. It is an account in full of the methods practised in the clinic of one of the leaders of German surgery, and is published with a short preface from the pen of von Bergmann himself.

The fundamental principle of aseptic surgery is identical with that of the more familiar antiseptic method; the one aiming at the exclusion of living germs from a wound, the other at securing the destruction of living germs which may perchance have found their way into a wound. Sterilisation is the pivot upon which both systems turn; it is the key-note of the one as of the other, although many of the details of its practical application differ in the two methods.

Aseptic surgery is a natural corollary to Listerism, involving no new principle, implying no fresh discovery; and whether pathogenic germs of wound infection enter the body from the air—as Lister originally thought—or by direct contact with external things—as we now believe—matters but little so far as the primary underlying principle of the modern treatment of wounds is concerned.

In illustration of some of the errors of belief of the early Listerians as to the infectivity of the air, a few passages from Schimmelbusch may be quoted. He says “many, even now, when they smell the disagreeable odours of a decomposing fluid, find it difficult to rid themselves of the idea that germs are being

* The Antiseptic Treatment of Wounds. By Dr. C. Schimmelbusch, Privat. Docent and Assistant Surgeon in Prof. von Bergmann's University Clinic at Berlin. Translated by A. T. Rake, M.B., F.R.C.S. London; H. K. Lewis. 1894.

given off with the vapours, and yet all the researches directed upon this point have shown it to be untenable. The evil-smelling air contains much fewer germs than that which we breathe in as pure and pleasant, and the stinking atmosphere of water closets, sinks, and sewers is uniformly found to be purer bacteriologically than the air of streets, dwellings, or gardens ;” and again, “the contamination of the air of a crowded room is a process in which micro-organisms play no part, and is due rather, like the foul air in sewers, to the presence of gases.” “The lungs give off no germs at all from their moist surfaces; they act rather as a filter, and the expired air could only become a vehicle for germs if sputum, mucous secretions, or even particles of tissue were coughed out with it. The number of bacteria in a crowded room is, as Strauss insists, diminished by the act of respiration, and a surgeon who operates in a theatre thronged with students stirring up dust, may take consolation from the reflection that every student with each breath renders some 500 cubic centimetres of air free from germs. The surgeon need have no fear of infecting a wound by his breath, nor of a septic patient’s breath filling the ward with infectious germs.”

Recent investigations have shown that the germs of wound infection are, generally speaking, quite different from those of ordinary putrefaction, and “it appears from the latest reports that while the air is an uncongenial resting place for any bacteria, it is particularly so for the germs of wound infection ; and that those which unavoidably get into it quickly perish.” The only thing therefore that must be done in order to avoid a possible infection by the air, is to guard against immoderate stirring up of dust, and the best means of rendering the air of an operating room free from germs, is to keep the room shut for several hours till all the germs have sunk to the ground.

Chapter III. is directed to showing that the diseases of wounds have a purely local origin, due to bacteria altogether foreign to the healthy body, which are introduced from outside, that there is no such thing as progressive suppuration without micro-organisms, and that all the problems of wound infection are not yet solved.

The author's views on the important matter of disinfection are interesting and of great value. He believes that "the removal of germs by mechanical means should come first of all the methods of disinfection," and of the germicidal agents heat, in some form or other, is really the only one on which strict reliance can be placed.

The chapters on disinfection of the body and sterilisation of instruments, dressings, etc., are written at great length, and illustrated by the apparatus in use at the Berlin Clinic. The sections devoted to aseptic sutures and ligatures, drainage-tubes, and sponges are full of practical points, and every line deserves careful notice. The same may be also said of those on the aseptic use of hypodermic and aspirating needles, and on aseptic principles applied to the passage of catheters and bougies. The sterilisation of fluids for washing and irrigation, and the aseptic management of operating and sick rooms are dealt with in separate chapters, and appeal strongly to the common sense of the practical surgeon.

The chapter on aseptic operations and wound treatment contains a detailed description of an amputation of the breast by von Bergmann, commencing with the preparation of the patient before operation, and going through, step by step, to the complete healing of the wound. We are particularly interested with this account of von Bergmann's method, because it is practically identical, in most of its leading features, with that pursued by the reviewer during the past fifteen years. The essentials of successful wound treatment are asepticity, hæmostasis, drainage, dryness, accurate coaptation, rest, position, pressure, and non-interference. Schimmelbusch regards asepticity as the most important of these factors, and, in the main, we agree with him; but whether this theoretically perfect asepticity is always secured in every-day surgical work is a matter of opinion. We are inclined to think it is not; and yet our wounds do well if the other above-mentioned factors are borne in mind. In speaking of the results of this aseptic method, the author says, in proof of its reliability, that "in a

city with a population of over a million, bullet wounds and compound fractures are by no means rare; and yet in von Bergmann's clinic there is no case on record in which a simple bullet wound or a fracture with a small wound has not healed in a short time and without complication under the aseptic sealed dressing." The value of such a statement depends entirely on the meaning of the terms a *simple* bullet wound and a fracture with a *small* wound; it cannot apply to the ordinary run of bullet wounds and compound fractures as met with in civil life.

A bibliography of nearly twenty pages completes the volume, and bears testimony to the labour given to the production of the work by its author. We heartily recommend this book to the notice of our readers as being, in our opinion, the best hand-book in the language on the subject of the modern methods of wound treatment.

A TREATISE ON THE DISEASES OF THE EAR.*

THIS volume, consisting of some 700 pages, follows the lines of the standard works on the ear in the classification of its diseases; but the affections of the nose and pharynx receive, and rightly, far more attention than is usually given to them. The writer goes even fully into the removal of tonsils as an essential in the successful treatment of some types of deafness, and describes clearly the method of removal of the gland, with the mode of arresting hæmorrhage should it become troublesome. This chapter will well pay perusal even by those who are accustomed to frequently perform the operation.

The following subject may be read with interest, particularly at the present time:—Influenza and Diseases of the Ear; and so, too, should the chapters—which are not found in the

* A Treatise on the Diseases of the Ear, with the Treatment of the Affections of the Nose and Pharynx which conduce to Aural Disease. By T. Mark Hovell, F.R.C.S. Edin. London: J. and A. Churchill.

ordinary text-books—viz., *Diseases of the Ear associated with Typhus, Typhoid Fever, and Smallpox; Life Assurance and Diseases of the Ear; Simulated Deafness; the Austrian and Prussian Regulations with regard to the Hearing of Recruits.*

We are surprised to learn that the author considers that for the examination of the membrane the best form of speculum is that which is known as Brunton's. We do not agree with him, and think that it is far from being the best speculum to put into the hands of a beginner. We remember only one surgeon who worked with Brunton's speculum, and he seemed to be for ever at sea in his diagnoses. Mr. Hovell advises that when an accumulation of cerumen does not come away readily on syringing the mass should be gently moved by means of a chromic acid carrier or probe. We think this rather injudicious advice, and more likely to do harm than good in inexperienced hands, for a mass which is loose enough to be moved by a probe only needs a little further patient syringing to come away.

In the article on *Foreign Bodies in the Ear*, the sharp hook is recommended for the extraction of certain bodies. We are of opinion that the only instrument a practitioner should use, under any circumstances, is a syringe. Nine out of ten cases of troublesome foreign bodies in the ear are due to meddlesome attempts at removal by means of forceps, hooks, and other instruments, in lieu of the only safe and satisfactory instrument for foreign bodies—the syringe.

The subject of adenoid growths in the naso-pharynx forms a comprehensive chapter, which is carefully and well written. The much debated and vexed subject of the anæsthetic to be used receives a large amount of attention. We agree with the author that for adults ether is to be preferred to any other anæsthetic, but we totally disagree with him that it is preferable to chloroform in children. Experience teaches us that ether for patients under the age of fifteen is not so safe an anæsthetic in these cases as chloroform, provided that the administration is carried on with such care as not to destroy the cough reflex.

One point cited by Mr. Hovell in his objections to chloroform demands attention—viz., “*the greater liability to secondary hæmorrhage when the circulation becomes brisk with returning consciousness.*” On what authority does the writer make this statement? Is it from practical experience, or is it the outcome of some pet theory? We have operated under chloroform for a number of years, and we may safely state that we have not met with a *single instance* of secondary hæmorrhage, nor have we ever heard of a case in the practice of other surgeons. If Mr. Hovell bases his reasons for selecting ether in preference to chloroform on such shallow ground as this, he cannot expect us to attach much weight to his conclusions.

We thought that the suggestion—put forward with so much vigour in some quarters—of operating by the finger-nail had died of ridicule, but we were mistaken. Still the author limits this mode of operating to growths which are “small, soft, and few in number.” Is it not necessary to keep one’s nails inconveniently long for such a purpose? and is it not well to caution those who attempt this method of operating to keep them clean? We wonder whether the author has ever seen “large fibrous growths filling up the meatus” disappear under alcohol, for he tells us that this treatment is adapted to such a condition.

Space will not permit us to enter into a more detailed criticism of this work. The author has spared no pains in bringing the book up to date, and he has well succeeded in his efforts. We can safely recommend this volume as one of the best works on diseases of the ear which has been written by a British surgeon.

ABDOMINAL TUMOURS AND ABDOMINAL DROPSY IN WOMEN.*

WE have rarely suffered more in the discharge of our duty as reviewer of books than in reading through this volume. Why

* Abdominal Tumours and Abdominal Dropsy in Women. By James Oliver, M.D., F.R.S. Edin.; Physician to the Hospital for Women, London, etc. London: J. and A. Churchill. 1895.

it is modestly entitled a work on certain conditions "in women" when nearly half of its contents might apply equally well to men, the author perhaps might be able to tell us. It is a book of the poorest kind, containing nothing new, nothing original. It is made up of twenty-six chapters, which read like clippings from standard text-books—not all of even recent date—interlarded with badly taken and imperfect notes from the author's own practice. We fail utterly to see how it can be of any service either to the student or the practitioner in the diagnosis or treatment of abdominal swellings.

The chapters on the tumours *peculiar* to women constitute perhaps the best part of the book, because in this department the author has apparently had the greatest personal experience. His views on pelvic hæmatocele are ancient, and he scarcely makes reference to ruptured tubal pregnancy as a cause of this condition. He makes no mention at all of tumours formed by distension of the Fallopian tubes, and clings to the old ideas of pelvic cellulitis as taught twenty years ago. He describes perityphlitis as an "inflammation of the cellular tissue located between the ascending colon and the iliac fascia," due in "the majority of cases" to disturbances originating "in the cæcum or ascending colon," and makes no mention whatever of the peritoneum or vermiform appendix in connection with swellings in the right iliac fossa. The several varieties of hernia are discussed in four pages, and a whole treatise on "Tumours produced by the Liver" is condensed into the following twelve.

A good example of the kind of matter with which the volume abounds is furnished by the section on "Dilatation of the Pancreatic Duct," the "physical signs" of which, according to the author, are "a swelling located in the epigastrium, and fixed. It may be rounded or more or less irregular. If large enough, fluctuation can be elicited." We should like to ask Dr. Oliver whether he has ever seen a case of this kind, and whether the "physical signs" were characteristic.

The volume is nicely got up in scarlet and gold, and will answer its best purpose if kept carefully dusted on a bookshelf.

METHODS OF OPERATING FOR CATARACT AND
SECONDARY IMPAIRMENTS OF VISION.*

THIS monograph of 77 pages, which is divided into two parts, is not remarkable for lucidness of expression; indeed many of the passages are so confusedly constructed that at times it is difficult to gather clearly what the author means. Evidently little care has been bestowed either on construction or revision.

In an early page the author gives the strength of atropine drops used by him as 4 per cent., while that of eserine is given as 2 per cent. Though these solutions are about four times the strength of the strongest usually employed, no reason is given for this, which leads one to think that possibly he meant to say 4 grs. and 2 grs. to the ounce respectively.

He cuts the eyelashes short, possibly a wise precaution, but one not usually adopted by English surgeons. He attaches great value to a special speculum, to which weights can be attached which are said to remove the pressure of the instrument on the eye, which may be useful if this end is really obtained. He advocates an eclectic method in operating, only performing iridectomy (1) in large nuclear cataracts, (2) when there is irritability of the cornea round its edge, (3) if there is evidence of glaucomatous tendency in the eye or its companion, (4) if the iris presents in front of the knife. In excision of the iris he recommends the blades of the scissors to be held parallel with the section instead of at right angles to it, as we think preferable; while before extending the lens, he everts the upper lid, which must increase the danger of rupture of the hyaloid, and in favour of which no reason is, or, we imagine, can be given.

He seems to have an undue dread of retained cortex, and a remarkable faith in the efficacy of the internal administration of

* Methods of Operating for Cataract and Secondary Impairments of Vision, with results of 500 cases. By Surgeon-Captain G. H. Fink, H.M. Indian Medical Service.

hydrarg. c. creta, and potass. iodid. and Dover's powder to promote its absorption and prevent intra-ocular inflammation. He says : "I make it a rule to give small doses of grey powder combined with Dover's powder at the outset of any case in which there is the least suspicion of impaired vision. I am thoroughly satisfied of its extreme value after cataract operation. If not pushed to Ptyalism, I do not see why it should not be used after every case of cataract operation as a preventative of complications in cases which present the very least suspicion of an unsuccessful result."

The writer frequently performed double extraction, and thinks "they were in no way discouraging," although in three cases out of ninety-eight both eyes were lost by suppuration ; but bearing in mind that suppuration is generally an accidental occurrence, which would rarely happen to both eyes if the operation on each was done at a different time, we hardly think most surgeons will endorse this opinion, having regard to the awful consequence to the patient of the total loss of both eyes ; nor do the results in other respects compare favourably with those obtained in his own hands in the cases of single extraction. As the only results given in the tables are cured, relieved, and discharged otherwise, whatever these statements may mean, it is difficult to form an opinion how far his results compare favourably with those obtained by others.

The second part of the book deals chiefly with posterior capsular opacity, which, for reasons hardly conclusive, the author prefers to designate as "hyaloid cataract." Of the pathology of this cataract he holds peculiar views not clearly justified by the facts ; and he strongly advocates that this opacity, when present, should be ruptured by the cystatome at the time of extraction, a procedure which most surgeons would condemn because of the certainty of escape of vitreous being thereby occasioned ; while there is no evidence, presumptive or otherwise, that by this procedure any better results are obtained than by a subsequent capsulotomy, as practised by most in such cases.

This part of the book is largely swelled by repetitions of statements made in the first part, which might therefore with advantage be omitted, and the work thus reduced in size. The book can hardly be considered a valuable contribution to the literature of cataract extraction.

DIAGNOSIS, DIFFERENTIAL DIAGNOSIS,
AND TREATMENT OF DISEASES OF THE EYE.*

THIS book, of 86 pages, consists of tables giving the symptoms of each disease in one column, while in a column opposite are given those of the disease for which it may be mistaken, the diagnostic symptoms being printed in small capitals to distinguish them from those of less diagnostic value.

In the preface the author states, "They are designed more especially for the busy practitioner who does not claim to be an ophthalmologist, or even well posted on diseases of the eye." Yet we find that not only is the ophthalmoscope necessary to observe many of the phenomena given, but even such complex and expensive instruments as the perimeter and Javal and Sciotz ophthalmometer are required—hardly likely to be used by the busy practitioner we should think. The statements under "Treatment" are most meagre and unsatisfactory.

This is a cram book of the worst type, of no value to the ophthalmologist, and very little use, we should think, to the practitioner, or even the student.

* Diagnosis, Differential Diagnosis, and Treatment of Diseases of the Eye. By A. G. Adams, M.D., Assistant-Surgeon to Manhattan Eye and Ear Hospital, New York, etc.

INFANT FEEDING BY ARTIFICIAL MEANS.*

THE impression produced by a careful perusal of Mrs. Sadler's book is that it deserves to be re-written. A small book dealing with the feeding of infants is certainly wanted, but we think its style must be different from that of the present volume. Mrs. Sadler has erred on the side of over-conscientiousness in quoting chapter and verse for nearly every statement she makes. 'This may be safe, but it is very irritating for her readers. Isolated sentences taken from various writers and strung together do not convey to the reader the same impression that the compiler experiences after reading the context in order to make the selection. This point has been overlooked. Take this paragraph quoted verbatim from page 147 :—"Referring to 'the presence of large curds in the intestines' as causing 'in the first few months of infancy the simple form of diarrhœa,' Dr. Angel Money writes (*Disease in Children*, second edition, p. 55)—'To prevent the formation of these lumps, isinglass will effect the purpose.' Dr. Money gives us the quantity to be used—'a teaspoonful or more of the jelly according to the quantity of the meal' (*Ibid.*, p. 231)" Surely the authoress does not really think that this paragraph tells us the quantity to be used. Again, the whole section on barley water is most puzzling. We certainly think that any young mother desiring information would put the volume down with a sigh and fly to the nearest cookery book, where at any rate she would find something definite without so many opinions being quoted and amounts specified. On page 79 a table of antacid equivalents is given ; but it is not stated to what amount of milk these equivalents should be added—the principal point one wants to know. It is true that on the preceding page an authority is quoted recommending that lime-water be added to milk in the proportion of one to four ; but this leaves the reader to work out the corresponding amount for

* Infant Feeding by Artificial Means. By S. H. Sadler. Scientific Press. 1895.

the table, and when that has been done he finds that the proportion of one to twelve is advised in the very next paragraph, followed immediately by a letter claiming that one to eight is a still better ratio. On page 76, however, it is stated that "two to four teaspoonfuls of lime-water to the half pint will suffice and even be more than sufficient." These few examples, out of many that we might quote, will serve to show that if Mrs. Sadler had written more of the text herself and put her authorities at the end where they would cease to worry the reader, the information which the book certainly contains would have been presented in a more available and far pleasanter form. We say this in all kindness, as we feel that the authoress has scarcely done herself justice.

The three sections into which the book is divided deal with cow's milk and its preparations, the milk of other animals, and baby foods of all kinds; the last being really a valuable addition to medical literature. Some of the numerous illustrations are pretty but quite irrelevant; *e. g.*, the two Japanese pictures do not illustrate in the slightest degree the only reference made to that country in the statement that there are no cows there.

It is surprising to find no mention in a book dealing with infant foods of the now well-known "Soxhlet" apparatus for the preparation of milk: but it is even more surprising to note that the writer is presumably unaware of the very existence of unsweetened condensed milk.

SYLLABUS OF GYNÆCOLOGY.*

A WELL-PRINTED book, in good type, in the form of a notebook, interleaved with plain paper for additional manuscript notes. It consists entirely of headings, forming a bald abstract or table of contents of the "Textbook," and has been compiled with three objects in view: first, to be used as lecture notes; secondly, to enable the student more intelligently to follow and

* Syllabus of Gynæcology, based on the American Textbook of Gynæcology. By J. W. Long, M.D. Philadelphia: W. B. Saunders, 1895.

remember the lecture ; and finally, as a convenient reference for practitioners. The third object will be better attained by a reference through its index to the "Textbook" itself. The more intelligent student will compile his own syllabus while attending the lectures. To the teacher who knows the American Textbook well, this syllabus may be of service in enabling him to remember the details which he has to expound.

TEXT-BOOK OF HYGIENE.*

THIS is the third edition of Dr. Rohé's text-book of hygiene. There is a clear and practical account of the various examinations required in public health investigations, and one which will prove useful to students. Several of the chapters relating to soil, sewage, epidemic disease, etc., are well written, and the illustrations are good. Others are unduly short ; and the subject of quarantine is not treated in a manner likely to prove useful to students in this country.

Many references are given for more extended study, and at the end of each chapter is a series of questions. Many of these are good ; several may be called trivial.

CLINICAL RESEARCH ASSOCIATION.

WE have received from the Clinical Research Association of 1, Southwark Street, London Bridge, a small handbook, giving a brief history of the Association from its commencement, and supplying all the necessary details regarding the collecting and transmission of specimens to be examined. The directions are excellently clear and succinct. The scale of fees attached is decidedly moderate. It is evident from the large number of subscribers, and the list contains many distinguished names, that the Association has had a rapidly growing success, and that its work must be well done.

* Text-Book of Hygiene. By George H. Rohé, M.D. Philadelphia : The F. A. Davis Company.

New Books, etc., Received.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XII. Edited by WM. THOMSON, M.A., F.R.C.S., Surgeon to the Richmond Hospital, Dublin. Dublin: Fannin and Co. 1894.

A Hand-book of Hygiene. By A. M. DAVIES, Surgeon-Major, and late Assistant Professor of Hygiene at the Army Medical School, Netley. Illustrated. London: Charles Griffin and Co. 1895.

Infancy and Infant Rearing; an Introductory Manual. By JOHN B. HELLIER, M.D., M.R.C.S., Lecturer on Diseases of Women and Children in the Yorkshire College. Illustrated. London: Charles Griffin and Co. 1895.

Anatomy and Physiology for Nurses. Compiled by DIANA C. KIMBER, Assistant Superintendent, New York City Training School. New York and London: Macmillan and Co. 1895.

Dissections Illustrated; a Graphic Hand-book for Students of Human Anatomy. By C GORDON BRODIE, F.R.C.S., Assistant Surgeon, North-West London Hospital. With Plates drawn and lithographed by Percy Highley. Part IV., The Abdomen. London and New York: Whittaker and Co.

The Holloway Sanatorium; Ninth Annual Report, for the year 1894.

Royal Institution for the Instruction of Deaf and Dumb Children, Edgbaston, Birmingham. Eighty-second Annual Report. 1893-4.

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JUNE, 1895.

ORIGINAL COMMUNICATIONS.

THE INGLEBY LECTURES.

LECTURE I.—ON APPENDICITIS.

DELIVERED AT MASON COLLEGE MAY 9TH, 1895.

BY GILBERT BARLING, M.B., F.R.C.S.
CO-PROFESSOR OF SURGERY IN THE COLLEGE.

GENTLEMEN,—

I felt honoured by the Council of Mason College in being invited to deliver the Ingleby Lectures this year, an invitation I gladly accepted, and for which I offer them my grateful thanks. The man whose memory we recall to-day was one of those pioneers in our School of Medicine whom we ought to honour. To the efforts of Dr. Ingleby and others like him, often under difficult circumstances, we owe much of our present prosperity; and I am persuaded that if Dr. Ingleby had lived to see the School of Medicine established as firmly as it now is and in a home so well adapted to its requirements, it would have been to him a source of profound satisfaction.

Considering how I could most usefully employ the opportunity thus afforded me, I was determined in my choice of a subject by the interest that has of late years attached to inflammatory and perforative lesions of certain portions of the alimentary tract. A further reason for my selection was a

considerable experience of these conditions afforded me mainly within the walls of the General Hospital.

I purpose to deal first with disease of the Vermiform Appendix; and before trenching upon clinical matters it is necessary that the anatomy of the parts in the right iliac fossa and the pathology of the inflammations in and around the appendix should receive due attention.

The cæcum is that portion of the colon which lies entirely below the junction of the ileum with the large intestine. It occupies very generally the right iliac fossa, but not infrequently it reaches to and extends into the true pelvis, whilst occasionally it may be found to have wandered to the left side of the middle line or to the right side in contact with the liver; and I send round a sketch taken by my House Surgeon, Mr. Bower, which shows the cæcum just below the position occupied generally by the splenic flexure of the colon. Posteriorly, the cæcum in its normal position lies upon the psoas and the iliacus, of course varying considerably according to its distension. It is completely covered by peritoneum, but is not provided with a mesentery. Its size is very variable; but an average cæcum is about three inches in its transverse, and somewhat less in its vertical axis. Continued on to it from the colon are the three longitudinal bands of muscle which, gradually converging, end on the posterior and inner part of the cæcum in the base of the appendix. These bands are of importance to the operating surgeon, because, when he is in doubt as to the exact location of the appendix, he is bound to discover it by following the longitudinal bands to their termination in its base. The anterior band is the most useful for this purpose, being so well marked and presenting so readily.

Opening into the cæcum on its posterior and inner part near to the ileo-cæcal junction is the vermiform appendix. This, originally the apex or terminal portion of the cæcum, remains in man undeveloped. It suffers also displacement, owing to the overgrowth of the front and right side of the cæcum, until instead of being the anatomical apex of the large intestine, it assumes

the position I have already mentioned. For this undeveloped remnant man pays a heavy forfeit. The walls of the appendix are similar to those of the cæcum, but some differences exist to which I shall presently refer. As far as the peritoneal coat is concerned the appendix, like the cæcum, has a complete one; at all events the exceptions to this are very rare; but it may happen that owing to a low reflexion of the peritoneum from the colon on to the posterior wall of the abdomen the upper part of the cæcum at the back and the base of the appendix have not a peritoneal covering. It may however for all practical purposes be assumed that the vermiform appendix is an intra-peritoneal organ, that any operation to be practised on it involves potentially the opening of the abdomen, and that it cannot be removed in any other way. The appendix is provided with a mesentery which is continuous with the under layer of the mesentery of the ileum and extends to the right on to the cæcum. The shape of the mesentery is triangular, and in its left or free border a small artery runs, for distribution to the appendix. To the peculiarity of its blood supply by this single vessel part of the instability of nutrition in the appendix, and its tendency to necrotic inflammation may be traced. Another point to be noticed is that the meso-appendix is shorter than the organ it supports, and often produces in it a curved or coiled condition. The muscular coats of the appendix are feeble and ill-developed. It is possible to trace an outer longitudinal and an inner circular coat continuous with those of the cæcum, but fibrous tissue forms the bulk of what are regarded as the muscular coats. The mucous membrane is thick in proportion to the calibre of the appendix and is richly endowed with lymphoid tissue, a circumstance which predisposes to inflammatory processes, and which has much to do with the formation of the dense concretions found here, owing to the infiltration of fæcal masses by salts excreted by the lymphoid tissue. The mucosa is also supplied with Lieberkuhn's glands, but the proportion varies considerably.

The normal position of the vermiform appendix is hard to define, as there are several positions in which it is found with

greater or less frequency. The ordinary positions are as follows:—(1) In this, the commonest, it lies to the inner side of the cæcum covered by the ileum and extending obliquely upwards from right to left. (2) The next most common is, when lying still to the inner side of the cæcum, it passes downwards from right to left, reaching to and perhaps extending into the pelvis. (3) It occupies a position to the outer side of the cæcum, running upwards it may be until its free extremity reaches to or even in front of the right kidney. (4) It may be found lying entirely underneath the cæcum, or partly there and partly herniated into certain small peritoneal pouches which I shall presently describe. Other rare positions may be found, as for instance when it occupies the sac of an ordinary inguinal hernia, or some part of the abdomen not the right iliac fossa, the appendix being widely displaced with the cæcum to which it is attached.

The length of the appendix varies much, extreme instances being as short as one inch and as long as five or six; an average, however, is from three to four inches. It has even been described as absent altogether, though this is probably an error, it either having been overlooked because of its being hidden by the results of previous inflammation, or because it has been partly destroyed by the same. The chief point of importance about its calibre is that its orifice where it joins the cæcum may be unusually narrow, and so prevent the escape of inspissated contents. This narrowing has been ascribed to the fold of mucous membrane at the junction which has been dignified by the name of Gerlach's valve. Occasionally the calibre of the appendix is dilated until the part resembles a piece of small intestine. This has been described as cystic dilatation, and is due to narrowing either at the orifice or lower down. Such a condition is, I believe, always due to a previous inflammatory attack. It is not at all uncommon to find a cicatricial stricture in the appendix of patients who give a history pointing to previous trouble in this region. If a stricture forms and the mucosa is left undestroyed in the terminal portion beyond it, we have a ready explanation of the cystic dilatation.

A few words as to the commencement of the ascending colon. It used commonly to be taught that this part of the intestine was provided with a mesentery, until the researches of Mr. Treves, since confirmed by others, showed that a meso-colon here is an exceptional condition, and that though the front and sides of the ascending colon are covered by peritoneum, a certain portion of the posterior surface is uncovered by it, and lies in contact with some loose cellular tissue. It is worth while recapitulating certain points as to the anatomy of the peritoneum in this region, because these have considerable bearing upon the inflammatory conditions arising in the appendix, and modern descriptions are opposed to those formerly accepted. The points I wish to insist on are that the cæcum is not provided with a mesentery, nor does its posterior surface lie in contact with any loose cellular tissue in the iliac fossa; it is simply surrounded entirely by peritoneum, and is capable of considerable displacement from the fossa which it usually occupies. The next point is that the appendix is practically always surrounded by peritoneum, and that the ascending colon generally has no mesentery, and that part of its posterior surface lies in contact with cellular tissue in which inflammatory processes readily spread.

Before dismissing this subject, certain occasional peritoneal pouches round the cæcum require some attention. These are very variable, and the descriptions of them by different observers do not tally. The best account of them with which I am acquainted is that given by Lockwood and Rolleston (*Journal Anat. and Physiology*, Vol. xxvi., p. 130). Two only are of such importance as to require mention here; they are the sub-cæcal and the ileo-cæcal, and they are only found occasionally. The former is a pouch to be seen directly beneath the cæcum by lifting this and turning it upwards in the direction of the ascending colon. Its mouth is about where the cæcum and colon meet, and its cavity extends upwards between the layers of peritoneum reflected from the ascending colon, sometimes for a distance of inches. The ileo-cæcal fossa lies behind

the junction of the cæcum and ileum, both of which must be raised and turned somewhat outwards to show its orifice. It is bounded on its outer or right side by the mesentery of the ascending colon, and on its inner or left side by the mesentery of the small intestine. The pouch extends directly upwards between the two folds; it may be as high even as the front of the right kidney. These, or any of the much rarer pouches which have been described, may contain the appendix, the condition being then described as retro-peritoneal hernia of the appendix. If the appendix becomes inflamed in this situation, the mouth of the fossa or pouch is usually blocked by adhesion, and, abscess forming, the pus may extend into the lumbar region, the kidney then perhaps being suspected as originating the suppuration. No doubt in some of the cases where the appendix has been described as absent, it has been concealed in one of these pouches. This should be borne in mind when there is difficulty in finding it, if operation is undertaken during a period of quiescence in a relapsing case.

To render clear the relations of the various inflammatory collections in the right iliac fossa, so much anatomy was necessary,

I turn now to the morbid anatomy and pathology of these conditions. Formerly they were spoken of as Typhlitis, Perityphlitis, and Paratyphlitis. Now the tendency is to drop these names, and to speak only of Appendicitis.

Without defending the use of this term on etymological grounds, there is every justification for its adoption from the pathological standpoint. There is a constantly increasing mass of evidence, obtained partly by operation on the living, and even more conclusively by inspection in the *post mortem* room, showing that in the appendix we have the actual seat of the inflammation which results in the formation of a tumour in the right iliac fossa, possibly of abscess, perhaps of acute peritonitis. The terms Typhlitis and Peri-typhlitis were used for a long time because careless examination overlooked the condition of the vermiform appendix, and even at the present time many prefer

to use these terms sanctioned by long use as expressing fairly well the clinical conditions we are called upon to treat. What's in a name? says Shakespeare. Not much perhaps so long as we are all agreed upon the nature and characters of the thing meant. But when there is divergence upon these points, and when one name more than any other conveys some definite information about the object we speak of, it is better to adopt it, and for this reason I prefer to use the term Appendicitis. A similar and equally justifiable change in nomenclature has been adopted in the pelvic inflammations of women. What was spoken of as Peri- and Para-metritis is now commonly referred to as Salpingitis, owing to the recognition of the importance of the Fallopian tube. The parallel between the parts played by the Fallopian tube in pelvic inflammations and by the vermiform appendix in so-called Peri-typhlitis is remarkable. Later on I shall point out the influence of catarrh of the cæcum in initiating that of the appendix. This does not alter the fact that it is the appendix in which all our interest centres and that the catarrh of the cæcum alone would give us little concern.

Examining the *post mortem* records at the General Hospital for the past twenty years, I find that there have been 22 deaths directly traceable to inflammation of the vermiform appendix. During the same period, apart from stercoral perforations of the large intestine due to obstruction, which do not concern the question now at issue, I find two cases of primary perforating ulcer of the cæcum with a circumscribed collection of pus as a result. In both these cases the vermiform appendix appears to have been healthy. The cause of these single ulcers is quite uncertain, but it is interesting to note that in one case there were five small simple ulcers in the stomach and three in the pharynx. Two doubtful cases I have not added to either side of the account, though could they be clearly unravelled I believe they would both be classed as cases of Appendicitis. In one of these the post-colic tissues are described as infiltrated with pus extending from the diaphragm to the pelvis, but not a word is said as to the condition of the appendix. In the other an

abscess behind the cæcum communicated through an ulcer with the interior of the bowel. It is however quite as likely that this was an appendical abscess which had ruptured into the bowel as that the perforation of the cæcum caused the abscess. There was old matting and adhesion of the appendix which was sharply bent upon itself, and these are changes recognised as often the forerunners of abscess around the appendix. However this may be, we have 22 deaths clearly traceable to disease starting in the appendix, to 2 deaths attributed to primary ulceration of the cæcum, whilst none are traceable primarily to the so-called cellular tissue behind the cæcum. Here is quite sufficient justification for the adoption of the term Appendicitis, and the case is made stronger when it is remembered that the object of many operations performed for the relief of the condition is a formal removal of the vermiform appendix.

Inflammation of the appendix commences from within, probably as a catarrhal condition extending to the lymphoid tissue with which the mucous membrane is so richly supplied. This is doubtless the reason why the incidence of the disease is so considerable in childhood and adolescence. Originating here as a catarrhal inflammation, we have a swollen softened state of the mucous membrane with sometimes a collection of mucus. In the mildest cases the diseased process stops at this point, and so far only a catarrhal appendicitis results. More commonly, however, the outer coats become involved, and the muscle, fibrous tissue, and peritoneum are infiltrated with inflammatory cells; we then have an interstitial appendicitis. The essential point now is that the inflammation is an infective one, and tends to spread from the appendix to the structures lying in contact with it, giving rise to peritonitis. This frequently results merely in the production of a limited plastic peritonitis, with adhesion of intestine and omentum, etc., to the appendix. On the other hand, but more rarely, the inflammation becomes a quickly-spreading one, which, in its severest form, produces a general septic peritonitis. Another result of the infection spreading through the walls of the appendix—a

sort of middle course—is abscess formation around it. This may amount only to a few drops of pus, or, if not interfered with, may increase until the collection becomes a large one. In what direction the pus will extend depends upon the position of the appendix. It may be towards the pelvis, down into the thigh, outwards to the iliac crest, or directly upwards behind the ascending colon. In one remarkable case under my own care, pus found its way into the lumbar region, and breaking through here, descended over the buttock, giving rise to a resonant abscess in this situation.

So far I have spoken of interstitial appendicitis without actual necrosis of the walls of the gut. But now I have to speak of those intense inflammations which give rise to actual gangrene or else to perforation of the appendix. Actual gangrene of the appendix is not so common as mere perforation. I have met with it thrice only. In the first case I opened the abdomen of a young child with appendicitis and advanced general peritonitis, removing the appendix. This presented, in addition to general severe inflammation throughout its length, a localised patch of about one-third of an inch in diameter near the free end, quite black in colour. It looked as though it might have been pinched by forceps until it had died, and there was no compressing body inside or outside the appendix to explain the occurrence. (See Case 24.) The second case was in a young man, whose appendix I removed within fifty hours of his seizure, and found that two-thirds of the organ were pulpy and necrotic, again without any explanation, such as the pressure of a stercolith inside or a strangulating band outside. (See Case 15.) Conditions such as these appear to be due simply to the intensity of the inflammation. By the pressure of the inflammatory exudation in the dense unyielding walls of the appendix on the outside of its supplying vessels, and partly from thrombosis inside those vessels, the blood supply to the whole or to part of the appendix is cut off, and gangrene more or less extensive occurs. Perforation may result of course from gangrene such as that I have just described, but it is commonly

due to ulceration set up by the pressure of a stercolith or foreign body. The curious thing is that these hard bodies may reside for some time in the appendix without ulcerating their way through its walls. It is only when inflammation has been lit up by some accidental cause that the pressure of the retained body produces ulceration and perforation.

With Gangrenous Appendicitis there is very early, it may be almost immediate, development of general septic peritonitis. The intensity of the infective process and the absence of limiting adhesions explain the fulminating clinical development of the case. With Perforative Appendicitis, on the contrary, although immediate general septic peritonitis is unhappily quite frequent, yet it is not the rule. There is generally time before actual perforation occurs for adhesions to form which prevent general infection of the peritoneal cavity, at all events for a time, and a circumscribed abscess results. This limitation of the inflammatory process is often greatly assisted by the position the appendix occupies, covered as it may be by the cæcum, or lying to the outer side of that part of the gut, or more or less completely inclosed in one of the peritoneal pouches to which I referred in my account of the anatomy of the parts. When abscess has formed, whether from perforation or without it, an extension of infection to the general peritoneal cavity may still take place, but usually this is brought about by the rupture of the limiting adhesions of the cavity.

To sum up these possible changes. We have in the first instance Catarrhal Appendicitis which easily may develop into the interstitial form. Once this has happened, either a limited plastic peritonitis with adhesion results, or a circumscribed supuration, *i. e.*, abscess, or a spreading peritonitis. When from the intensity of the inflammation in the appendicular walls gangrene results, a fulminating general septic peritonitis is set up very early. If a stercolith or foreign body produces perforation of the appendix a well-defined abscess may form around, or, mainly owing to the position of the appendix, free in the abdominal cavity, general septic peritonitis of an intense kind rapidly follows perforation.

Causation.—What are the factors which set going inflammation in the appendix, with its various possibilities? We cannot always recognise them. The attack may come on in the midst of perfect health, go on to a fatal termination, and the clinical history and the autopsy fail to explain its origin. In other cases we are not so much in the dark. First, because most easily recognised, among the exciting conditions I place the presence of a hard body inside the appendix. Generally, this can be easily made out to consist of inspissated fæcal matter, though sometimes the concretion is so dense and stonelike that, shown apart from the appendix, it might be impossible to tell it from a renal calculus. Occasionally, a genuine foreign body is present—a fruit-stone, a shot, a grain of corn. In what proportion of cases a hard body is contained in the appendix cannot be determined. In a series of cases requiring operation, or examined in the *post mortem* room, it may be almost constantly present; but these are the most severe examples, and perforation very common. In the milder non-perforative cases, which are more numerous than the former, and usually come under the care of the physician rather than the surgeon, we have no data as to the presence of concretions. From the fact that such practically always recover without surgical intervention, we are likely to remain without information, but I infer that stercoliths are not common in the milder types of appendicitis. Where are the concretions formed? An ingenious attempt has been made to show that they are formed in the cæcum, are forced thence into the vermiform appendix, giving rise to intense colicky pain, and a clinical term, “Appendicular Colic,” has arisen out of this. Patients who ought most often to suffer from colic of the appendix, if this were true, are elderly people, and women especially; whilst experience shows overwhelmingly that appendicitis is much more common in the young than the old, and in males rather than females. That severe colic occurs there is no doubt; it is a most significant symptom, the importance of which cannot be overestimated. But the inference as to its production and its

analogy to renal or biliary colic is, I believe, entirely false ; this will, however, be discussed later on. It is certain that fæces enter the appendix and there become inspissated, as in this large appendicular calculus which I show, and such is probably the common origin of these concretions within the appendix. The curious thing is that concretions may exist possibly for a long time without doing harm, when suddenly an acute inflammatory process is ignited and the concretion perforates the walls of the appendix.

This leads me to the second exciting cause, which, whilst not so readily recognised as the concretion, is, I believe, much more common ; it is catarrh of the cæcum and ascending colon. Careful enquiry will in a proportion of cases, especially amongst the poorer classes and in children, reveal the fact that the colicky pain follows some hours after a large and indigestible meal, or is due to exposure to cold. This suggests a catarrh of the colon, which, extending to the appendix, sets up swelling of the mucous membrane with increase of secretion. The swollen mucous membrane blocks more or less completely the orifice of the appendix, and the retained and stagnant secretion, always mixed with various putrefactive and pathogenic organisms, decomposes, and we have a simple catarrhal inflammation converted into an infective one. This may become of the most intense description, producing any of the disastrous results to which I have alluded—Perforation, Gangrene, or General Peritonitis. If a concretion exists in the appendix, although it may have been formed and fixed there a long time previously, the infective inflammatory changes I have just spoken of determine the ulcerative process at the point of impact of the concretion, and perforation results. This is the only way in which I can reconcile the facts that a stone-like body is formed in and remains a long time within the appendix without doing harm, and that suddenly this tolerance of the appendix gives place to those changes which result in perforation.

The part played in appendicitis by micro-organisms is not yet

clearly unravelled, and at the present time I am engaged in some investigations on this subject. In the contents of the appendix, in its walls and in the abscess or general peritonitis round it, numerous germs may be found, but chiefly the *Bacterium Coli Commune*. This bacillus is constantly found in the healthy intestine, where it does no harm ; yet, under certain circumstances, it appears capable of invading the intestinal walls and spreading through them to the peritoneal cavity, producing an infective inflammatory process of possibly the most intense kind. What induces this change, that a bacillus usually unable to attack and penetrate the intestinal wall, every now and then appears to acquire this power ? The changed condition may be either in the bacillus, in the contents of the intestine, or in its walls. In appendicitis, I believe that a catarrhal process, spreading from the cæcum to the appendix, with retention of the secretion in the partly choked narrow gut, provides conditions of food and rest which invite a luxuriant and it may be malignant development of the bacillus. At the same time, the swollen and succulent mucous membrane is less resisting, and becomes invaded by the organism, and all the worst possibilities of inflammation of this part may follow. To catarrh, therefore, of the large intestine I attribute the initiation of the appendicitis ; to the activity of the ordinary colon bacillus the conversion of a simple to an infective inflammation, with all its possible extensions ; while the accident of perforation is generally due to a concretion. If such be present, although previously not harmful, the acutely inflamed appendicular walls undergo necrosis from its pressure, and perforation is produced. It must be borne in mind that once the appendix has been inflamed, it is often embarrassed in the future by adhesions from without tying it down in a kinked position, so that its contents cannot easily escape. Or a partial or complete stricture may form, giving rise to retention of secretion, as in this specimen I show you, where the dilatation was so considerable as to produce a cavity holding some drams of fluid. A patient whose appendix has been damaged, more easily gets a further attack than he does his primary one.

As to the influence of age and sex in the production of the disease there can be no doubt. Adolescents suffer most heavily, and nearly fifty per cent. of the cases occur between the ages of 10 and 25. Infancy is not exempt nor is old age. The explanation of the predisposition of young people to be attacked is I believe supplied by Kelynack, who attributes it to the large amount of lymphoid tissue in the appendix and the well-known tendency of this tissue to inflammation in the young. Males are said to suffer about three times as often as females, and for this there is no sufficient explanation forthcoming. My own cases are nearly evenly divided between the sexes.

Typhoid fever has been described as the forerunner of appendicitis, it being assumed rather than proved that the orifice of the appendix becomes involved in typhoid ulceration, a stenosis resulting. The possibility of this can hardly be questioned, but I have only once seen a case in which appendicitis has followed typhoid, and in this there was an interval of five years between the two illnesses.

Signs and Symptoms.—Appendicitis varies extremely in its course and severity, and, consequently, in its treatment and prognosis. Classification into several groups possessing common features is therefore essential to a proper understanding and treatment of the disease; but there are certain features some of which are to be found in all cases, and these I propose to describe before differentiating between the various groups.

First in importance is the onset of the attack. This when carefully investigated will be found to be often so typical as to give the key to the whole position. It may be as characteristic as the commencement of acute pneumonia or scarlet fever. A patient, previously in good health, is seized with abdominal pain of a crampy colicky character. This pain at first is not well defined, but rolls over the whole of the abdomen, and if localised at any particular point this is generally in the neighbourhood of the umbilicus. The pain may be of the greatest severity, and I have seen a patient bathed in sweat and rolling about the bed as in the worst attacks of renal colic. The term Appendicular

Colic has been applied to this seizure, and it is often so characteristic that no exception need be taken to the term. Talamon's explanation of the colic as due to the squeezing of a hard fæcal mass into the appendix from the cæcum is opposed by several facts. There is positive evidence that many stercoliths have long resided in the appendix and that they are produced there by inspissation of fæces. In many cases of appendicular colic no concretion is found; and again the mechanical relations of the appendical orifice to the wall of the cæcum, quite unlike those of the ureter to the kidney pelvis, are such as to forbid the idea that the contractions of the cæcum would drive bodies into the appendix when they could escape by the ascending colon. I attribute the colic myself to a wide-spread reflex spreading through the sympathetic plexuses in the abdomen, and excited by the severe inflammation in the resisting and inelastic walls of the appendix. The seizure is frequently spoken of by the patient as cramp or spasms or a bilious attack. It may last some hours with partial remissions, and is generally accompanied by vomiting. Vomiting at this stage may only occur once, or if repeated is not persistent like that of peritonitis or intestinal obstruction, and the vomited matters consist of the last taken food with admixture of bile. I shall have to refer again at some length to the symptom of vomiting. Here I will only add that persistent vomiting or persistent hiccough are evil signs, as is coffee-coloured vomit from the presence of altered blood. After the wide-spread pain has existed for from an hour to as long as ten or twelve hours the seat of pain will be referred to the right iliac fossa, and examination of the abdomen by palpation will reveal marked tenderness here.

This is the typical onset, and if it were constantly present diagnosis would be rendered so much the easier. Though certainly not constant, it is present in a large proportion of cases, and I am convinced is, not rarely, overlooked. Its value is greatest in the most acute perforating cases because in these it is apt to be most marked and, in these, early diagnosis is essential to successful treatment. In exceptions to the typical

attack it may happen that the pain is not diffused at first, but is localised to the right iliac fossa, or that after the diffuse pain has ceased, some part distant from the right iliac fossa is localised as the seat of pain. In a case under the care of my colleague, Dr. Stacey Wilson, a boy had the wide-spread pain, with subsequent local pain in the *left* iliac fossa. He died in collapse after a severe exacerbation of pain, and it was found that his vermiform appendix, in the usual situation on the right side, had perforated and given rise to peritonitis. In a case I have recently operated on there was the diffuse colicky pain with vomiting, but pain, if anywhere localised as most severe, was in the *left* iliac fossa. (See case 12). Despite exceptions such as these, the typical onset is most valuable in diagnosis and, when it is atypical, we have the presence of other indications to help us to a correct conclusion. In this early stage Rigor is exceptional, and personally I have only met with it once as part of the onset. Late in the disease, and associated with well-defined suppuration, it is not uncommon to have one or even several rigors if the pus is allowed to remain unevacuated.

Constipation is the rule at this stage and immediately preceding it, although a scanty motion may be passed, and diarrhoea may even take the place of constipation. In one of the most intensely septic cases of peritonitis (Case 21) upon which I operated with success, this symptom was present, and in all probability the emptying of the intestine of its toxic contents and the prevention of paralytic distention had much to do with the patient's recovery. I therefore look upon diarrhoea as of favourable import.

The Temperature is almost always elevated at the onset. It may, within twenty-four hours, reach to 102° or 103° F. but a commoner range is 101° to 102°. If the case is a mild one, in two or three days all fever may have disappeared; if, on the contrary, it is an *acute* perforating case, the temperature tends generally to increase, and on the third or fourth day may have steadily risen from 101° to 103° or 104°. If abscess formation is taking place, the temperature will be raised at night to 101°,

102°, or more, with a morning remission such as is commonly seen in pus formation in other parts of the body. To this general description of the range of temperature many exceptions may be mentioned. For instance, I show a chart taken from a perforative case in which the temperature fell on the fourth day from 101·2° to normal, and remained so for two days, when perforation into the peritoneal cavity suddenly occurred. In Case 14, at the commencement of the third day of the disease, the temperature fell from 104° to 99°, the other symptoms becoming aggravated; and that day several ounces of foetid purulent fluid were evacuated from around the appendix. The erratic course taken by the temperature in such cases as I have just quoted has induced some surgeons to declare that the temperature is of little value as an aid to diagnosis. I should put the matter rather in this way—that it is an uncertain guide, and one only to be relied upon when confirmed by other phenomena present. If it presents the paradox of a falling temperature with a quickening pulse, the improvement in the temperature would be a fallacious guide; if, on the other hand, the temperature goes on increasing on the third or fourth day, this is a symptom of serious importance, indicating a severe infection which is extending beyond the locality it originated in. In the differential diagnosis between appendicitis and such conditions as intestinal obstruction or renal colic, the presence of two or three degrees of fever would point strongly to the first-mentioned condition; and for this reason alone the state of the temperature is too valuable to be made little of.

The Pulse is undoubtedly a guide more to be relied on than the temperature. Much quickened, it always is in the acute onset, running from 100 to 110 or more, but subsiding in three or four days, if the case is a mild one speedily to undergo resolution. Otherwise, the rapidity of the pulse remains and may increase, up to 120 quite commonly, and far beyond this if a fatal termination from peritonitis is impending. The quickening of the pulse, despite improvement in the temperature, and it may be in other directions, is a fact of great importance, and

the surgeon should carefully scan his patient to see if he has overlooked any other point. In Case 14, referred to just now, with a fall of temperature from 104° to 99° the pulse increased from 114 to 132, and the respirations from 36 to 42. As to the character of the pulse little is to be said, but just this much should not be omitted. Generally the pulse is soft and easily compressible, and remains so even when peritonitis is commencing or well established. There is a tradition that in peritonitis the pulse is hard and wiry, and I have often, when discussing these cases, had my attention drawn to the fact that these characters are absent as an argument against the presence of peritonitis. Everyone has, of course, met with the wiry pulse of peritonitis, but in my experience it is oftener absent than present.

After the severe colicky pain of the onset has passed away and local pain is felt in the right iliac fossa, some general tenderness of the belly may exist with rigidity. As a rule, the limited acutely tender spot in the right iliac fossa can be detected about the point indicated by McBurney, in a line from the anterior superior spine to the umbilicus, about three inches from the former.

This brings me to the question of the presence or absence of a tumour. Some time ago, examining the records of a large number of cases occurring consecutively in the General Hospital, I found that in two-thirds of the cases a distinct tumour was recognised in the right iliac fossa. From my own personal experience, I should say that what is sometimes felt and spoken of as a tumour here is merely the rigid contraction of muscle over the appendix and adjacent parts acutely inflamed and tender. However that may be, undoubted tumour is very common, and is due to thickening and matting of the appendix to the gut and omentum round it, sometimes also to the parietal peritoneum, and to infiltration later into the fasciæ and muscles of the abdominal wall. In this way a most massive swelling may result. In addition to this matting and infiltration, later, pus may be added, making the tumour larger and more definite.

The presence of a tumour, produced in either of the ways indicated, is a common and valuable sign. Where, owing to tenderness and general muscular rigidity, no tumour can be felt, by relaxing the muscles with an anæsthetic, one can pretty certainly be detected, though in the most acute cases it may amount to nothing more than an ill-defined fulness in the right iliac fossa. In only one case (No. 15) that I have operated on have I failed under anæsthesia to find this; and I lay stress on the great value of this method of investigation in young children, who resent examination, and in adults with fat belly walls. This description of the formation and presence of a tumour would be incomplete without a reference to those exceptional cases in which the cæcum and vermiform appendix occupy some unusual part of the abdomen. Should an erratic appendix become inflamed, the irregular position of the point of greatest tenderness and tumour would be very puzzling, yet a few brilliant examples are on record of diagnosis and successful operation of such cases.

Is anything to be learnt by examination *per rectum* or *per vaginam*? In a limited number of cases a tumour may thus be felt; but I believe it is exceptional for a tumour thus to be located which cannot be felt through the abdominal walls. Personally I have only once obtained information in this way, when examination of the abdominal walls failed to give it; this was in Case 12. Here bi-manual examination revealed the presence of an inflamed appendix, with adhesion round it, which I could not detect in any other way. From the published reports of cases, it is evident that other observers have reaped greater advantage from bi-manual examination; it therefore should not be omitted as part of a routine examination.

A symptom not to be ignored, though not commonly present, is pain before, during, or after micturition. It is due to the position of the inflamed appendix within, or close to, the brim of the pelvis. The inflammatory process extends thence to the peritoneal coat of the bladder, and as the organ is stretched, relaxed, or contracts, pain is produced. I have met with it in five cases, all males. In one of them retention of urine

resulted, which I was called on to relieve, the presence of appendicitis not having been recognised until I detected it. In one of the others the pain connected with micturition was the chief trouble of which the patient complained. Curiously enough, the only patient I have operated on for appendical abscess opening into the bladder, a female, had no trouble in micturition at any time.

The patient practically always assumes the dorsal decubitus, lying as a rule with the legs extended. Exceptionally, the right hip is flexed to relax the muscles and fascia surrounding the inflamed area, and when general peritonitis exists both lower limbs may be drawn up. If the case is very acute, the muscles of the abdominal wall will be fixed more or less completely and will be little used in respiration. This rigidity of the belly does not necessarily imply that peritonitis exists, indeed I have seen it in a marked degree when I have had positive evidence by operation that there has not been general peritonitis. Nevertheless, it is a sign which no prudent surgeon will ignore, as it tells that a severe infection has involved the appendix and that extension to the general peritoneal cavity is one of the results to be apprehended. Distension of the abdomen with rigidity is much more significant of peritonitis, and yet I hesitate to say that the combination of the two certainly indicates the presence of general peritonitis. In three very acute cases (Nos. 14, 15, 16) in which I have operated, all of which recovered, both marked rigidity and distension existed, and I am bound to say I believed that general septic peritonitis was present, the more so as two of them were vomiting frequently. Yet, the cessation of all the bad indications immediately after removal of the vermiform appendix in one case and of drainage of an ill-defined collection of pus around the vermiform appendix in the other two, leaves me in doubt whether I had not diagnosed general extension to the peritoneum when it did not exist.

The patient's face is worthy of study. Early in the disease it is the puckered face of pain, especially in children. As the acute pain subsides the face becomes more restful. If general infection of the peritoneum occurs, we have the flushed face of

septicæmia or the pinched, collapsed face which stamps the case as one of severe peritoneal inflammation.

Delirium is not often present, but when there is septic peritonitis, it may be, as in septicæmia from other conditions. There is nothing characteristic about it, but it is of evil prognosis.

ON THE PRINCIPLES AND TECHNIQUE OF STERILISATION BY HEAT.*

BY CHARLES LEEDHAM-GREEN, M.D., HEIDELBERG, F.R.C.S. ENG.

LAST July there appeared in this journal a brief and somewhat abruptly concluded paper, in which I endeavoured to give a general idea of the so-called *aseptic treatment of wounds*. Within the limits of so short a paper it was impossible to discuss the subject at length; and I now propose to treat a little more fully the *technique* of sterilisation.

The whole system of sterilisation by heat is based upon the fact that all forms of micro-organisms are destroyed at certain high temperatures, the degree of heat necessary for their destruction varying with the kind and condition of the organism, and the mode in which the heat is applied.

It is essential first to determine which particular kind of organism we desire to destroy; for we now know that it is not absolutely necessary, as Lister at first supposed, to destroy all the forms in order to the successful healing of a wound, the majority of the forms of bacteria having been proved to be innocuous; moreover, the means at present at our disposal are quite inadequate to such a task. Globig † found spores of one of the potato bacilli capable of withstanding even boiling water for hours together without losing their vitality. Such being the case, it must at once be obvious how impracticable it would be in surgical practice to effect the destruction of all. Happily for

* A Paper read before the Queen's College Medical Society.

† Zeitschrift für Hygiene. Band iii., 1888.

us it is quite immaterial whether we destroy all forms of bacterial life or not, so long as we kill those which are prejudicial to wound-healing.

Micro-organisms may be roughly divided into these two classes—viz., those which are injurious to wounds, or pathogenic; and those which are innocuous, or non-pathogenic. With the latter we have nothing to do; we fear only the following pathogenic forms:—

1. *Staphylococcus pyogenes aureus.*
2. *Staphylococcus pyogenes albus.*
3. *Staphylococcus pyogenes citreus.*
4. *Streptococcus pyogenes.*
5. *Streptococcus eurysipelatosus.*
6. *Bacillus pyocyaneus.*
7. *Micrococcus gonorrhœæ.*
8. *Bacillus diphtheriæ.*
9. *Bacillus pneumoniæ.*
10. *Bacillus tuberculosis.*
11. *Bacillus tetani.*
12. *Bacillus œdematis maligni.*
13. *Bacillus anthracis.*

Of these the last four produce spores; the others, in the process of development, do not pass through the spore stage. This is important to remember, for it is so much more difficult to destroy spores than adult forms. Measures which are quite efficient in the one case, often prove powerless in the other.

Ex. gr., a 5 per cent. solution of carbolic acid will kill the sporeless forms within a minute or two; but days, even weeks, are required to destroy some of the spores by the same means. Any method of sterilisation, therefore, which fails effectually to kill the spores of pathogenic bacteria is unsuitable for surgical purposes. It is customary to experiment with the spores of the anthrax bacillus, one of the most resistant of all the pathogenic bacilli.

As I have said, the temperature at which micro-organisms are destroyed varies with the kind of germ, and the mode of applying the heat.

There are four different ways in which heat may be applied :—

1. By the open flame.
2. By hot air, or dry heat.
3. By steam.
4. By boiling water, or other fluids.

The first of these methods—the open flame,—though extensively used in bacteriological work, could only be employed in sterilising instruments ; but, inasmuch as the temper of the instruments is affected by the application of heat, it is unsuitable for surgical use, excepting perhaps with a few special instruments, where the loss of temper consequent upon such a process is immaterial.

The second method mentioned is sterilisation by means of hot air. It is hardly possible to say to whom we are indebted for the introduction of this method. It began to be systematically used about the year 1870, more especially in France, where it is still extensively employed in preference to the use of steam, which has to a large degree supplanted it in other countries. The introduction of hot air was undoubtedly a great advance on the old method of fumigation by sulphur. For a time it was regarded as the ideal agent for the sterilisation of clothes, bedding, and surgical dressings. It was Robert Koch who struck the first blow at the hot-air method, by the publication of the results of an inquiry into the efficiency of the hot-air sterilising apparatus then in use at the Moabit Hospital in Berlin.* He showed conclusively that the sterilising power of hot air had been much exaggerated ; and that although a temperature of 120° C. for one hour and a half was sufficient to destroy low vegetative forms of life, it failed to kill the spore-forming bacteria. Indeed it required the temperature to be maintained at 140° C. for three or four hours before some of the spores, such as those of the anthrax bacillus, could be destroyed. As we shall presently see, this is a much longer time and a much higher temperature than is necessary when either

* Mittheilungen aus dem kaiserlichen Reichs-gesundheitsamt 1881, Bd. I.

steam or boiling water is used. This in itself would be a grave objection to the use of hot air in surgical practice. But there are other disadvantages connected with its employment; one being the difficulty of maintaining a constant and equal temperature in all parts of the apparatus without the use of costly and complicated mechanism. In the apparatus generally in use it is by no means unusual to find a difference of as much as 30 degrees between the temperature at the top of the steriliser and at the bottom. Again, hot air, unlike steam, penetrates closely rolled material with great difficulty, so much so, that if the temperature of the air in the steriliser be as much as 140° C., a thermometer wrapped in a blanket would barely record 80° C. This is an important point with regard to the sterilisation of bedding, for which the use of hot air has been specially advocated; and further, the use of hot air is decidedly injurious to many articles, causing them to become brittle and friable, and, indeed, unless great care be taken, actually scorching them. From these considerations it will be seen that the use of hot air as a sterilising agent is open to very grave objections.

The third method is sterilisation by steam. Koch, not content with proving the unsuitability of hot air, sought to replace it by a more efficient agent. This he did, after several experiments, by the introduction of steam.* He found the action of steam to be truly remarkable. It will be remembered that in order to destroy the anthrax spores by hot air it is necessary to maintain a temperature of 140° C. for three or four hours. *But the same result can be more certainly attained by subjecting the spores to the action of steam for ten minutes only.*

Moreover, steam, unlike hot air, diffuses itself with great rapidity, filling every corner of the vessel; and the differences of temperature met with at the top and bottom of the hot-air chamber are not observable when steam is used; so that the same temperature is practically present whatever the shape of the vessel may be. I have remarked that hot air penetrates

* Versuche über die Verwerthbarkeit heisser Dämpfe zu Desinfektionszwecken von Dr. Koch, Dr. Gaffky, u. Dr. Löffler.

rolled material with difficulty; steam does so with ease and rapidity. Nor does it injuriously affect the texture of the material. It neither scorches it nor renders it brittle. It would appear therefore to be entirely free from the objections raised against the use of hot air. The only drawback to its use is that it slightly moistens the articles, but this in most cases is quite immaterial and, as we shall see, can largely be avoided.

In order to insure the entire efficiency of steam certain conditions are indispensable. It will be well to refer to these before considering the various forms of sterilising apparatus to be employed.

The first point to be noted is that the sterilising chamber must be filled with steam *alone*, not with a mixture of steam and air. The importance of this will be readily seen when it is remembered that whilst steam at a temperature of 100° C. is one of the most powerful sterilising agents yet discovered, hot air at the same temperature is of but little value.

In all large vessels where clothing or bedding is to be sterilised, it is desirable to admit the steam at the top of the vessel and to allow the air to escape from below, for although the steam rapidly diffuses itself, if it be admitted at the bottom of the vessel and the outlet be at the top, a stratum of air at the lower part may remain unremoved.

Much confusion still exists in the minds of many as to the value of superheated steam and of steam under increased atmospheric pressure. It was natural to think that inasmuch as air is more powerful as a sterilising agent at a temperature of 150° C. than at 100° C., and at 200° than at 150° (the higher the temperature the more effective its action), the same would hold good with regard to steam; this, however, is not the case. If steam at 100° C. be heated to 150° C., it will, other things being equal, lose in efficiency as a sterilising power. This peculiarity was first demonstrated by Professor Esmarch.* Passing steam through gun barrels heated by gas jets, he was able to raise it to any temperature at will. He found that as

* Zeitschrift für Hygiene, 1888.

the steam rose in temperature it lost in sterilising power, and that above 140° C. its action corresponded merely to that of dry air at the same temperature. This loss of the sterilising power of superheated steam apparently arises from the fact that the increase of temperature dries the steam. The nearer the steam is to its condensation-point (*i.e.*, the damper it is), the easier does it soften and penetrate the resistant capsule of the bacterial spores. It may, however, be remarked that superheated steam can be preserved near to its condensation-point by proportionate additional pressure. Then, so far from being less effective than ordinary steam, it becomes the most powerful sterilising agent we know. One of the non-pathogenic micro-organisms, which has unusual power of resistance, is able to withstand steam under ordinary pressure at a temperature of 100° C. for six hours before it is destroyed, but is killed within a few seconds when subjected to superheated steam under a pressure of three atmospheres.

It is not surprising, therefore, that many attempts have been made to introduce superheated steam under high pressure for surgical purposes; but its use cannot be commended. We remember that the temperature at which water boils depends upon the amount of atmospheric pressure to which it is subjected according to a definite law. At ordinary atmospheric pressure water boils at 100° C. If the pressure of the atmosphere be doubled, the water boils at 120° C.; if trebled, at 134° C. This relation of temperature and pressure must be strictly observed, in order to the maintenance of the sterilising power; for if, for instance, the temperature be unduly increased, the condition of the steam becomes similar to that which Esmarch produced by passing it through heated gun barrels, and is unsuitable for sterilising purposes. If, on the other hand, the pressure be excessive, either the steam in the sterilising vessel condenses, or there is no longer pure steam present, but a mixture of steam and atmospheric air, either of these being unsuitable for our purpose. To obtain this necessary definite relation between the degree of pressure and the

temperature, demands the use of complicated and costly apparatus. It is essential that the steam in such apparatus be regulated not merely by the thermometer, but also by the manometer; and it is perhaps needless to say that the use of steam, under high pressure, is not free from danger, requiring the attention of a skilled mechanic. It is therefore plain that superheated steam is unsuitable for ordinary surgical practice. And, moreover, we have already seen that the most resistant pathogenic germs known are with certainty killed in a few minutes by the action of steam, without excess of either pressure or temperature, the use of which is free from these difficulties and dangers.

It is therefore obvious that simple steam is the best agent for sterilising bedding material and surgical dressings; but it must not be used for steel instruments as it causes them to rust. For them we have an efficient agent in boiling water. Even the most resistant of pathogenic spores are destroyed by boiling water within a few minutes. Schimmelbusch found that staphylococcus and bacillus pyocyaneus were killed by its use in from two to three seconds, whilst anthrax spores, which could survive the action of steam for ten minutes were completely destroyed in two minutes by boiling water.

The objection that was raised to its use at first, that it caused steel instruments to rust, has been overcome. Schimmelbusch found that the addition of one per cent. of carbonate of soda to the water effectually prevents rust. Moreover the alkaline solution is itself a valuable agent in sterilising, from its power to dissolve grease, giving the water greater penetrative action. It is also to be carefully noted that boiling water is in one important particular—its cleansing power—superior to all other heat-sterilisers. Whilst hot air and steam are powerful sterilising agents they have no cleansing action. They kill the germs but do not remove them. Boiling water, still more the alkaline solution, not only destroys the organisms but actually removes them, together with all dirt and grease. Then there are other wound poisons, such as the products of micro-organisms and

certain chemical substances not necessarily of bacterial origin, upon which simple heat has no effect, but which boiling water thoroughly cleanses away. The advantages of a boiling alkaline solution over the other heat-sterilising agents are so great that it is well to use it whenever it is practicable. There are two substances for which however it is altogether unsuitable, namely, catgut and sponge, both of them being destroyed by it.

Referring to the alkaline solution, it may be well to observe: (1) In order effectually to prevent the steel instruments from rusting, the water must contain at least 1 per cent. of the carbonate of soda. There is no harm in using a higher percentage, but it must not be less. (2) If the common crystallised carbonate of soda (washing soda), and not dried soda be used, it must be remembered that it contains seldom less than 60 per cent. of water of crystallisation, allowance must therefore be made for this by taking three times the amount of soda. (3) It is better to allow the water to boil for a few minutes before placing the instruments in it, so that the oxygen held in solution may be driven off. This still further reduces the likelihood of rust forming. An objection is frequently raised against the use of boiling water on the ground that it blunts the sharp edges of the instruments. In order to prevent this, it has been advised that the knives should not be boiled for more than a minute. The objection is founded on an error. It is not the boiling that blunts the knives, but the knocking them against each other. If this be avoided they can be boiled with impunity, as may be proved by examination of the edge under the microscope after boiling;* nor does the boiling affect the temper of the instruments, as has been supposed. In order to test this, I repeatedly boiled for many hours finely tempered watch springs, and submitted them to examination by a watch-spring maker, who was unable to detect any change in the temper.

There is yet another method of treating instruments, which has obtained some favour in France. I refer to the use of super-

* Knives should never be placed in carbolic lotion, for even a diluted solution of the acid quickly impairs their edges.

heated water, or to boiling under pressure in an apparatus similar to Papain's digester. By this means the temperature of the water is considerably raised above 100° C., and in consequence the process of sterilisation is correspondingly quicker, but seeing that with simple boiling the time occupied is only five minutes, there is practically no advantage to counterbalance the cost and care of such an apparatus. I mention this only to set it aside as unnecessary.

Let us now turn from the discussion of the principles of sterilisation to a brief glance at some of the apparatus to be used.

Apparatus for the Sterilisation of Dressings by Steam.—We have seen that the best way in which we can sterilise our dressings is to expose them for half an hour to the action of pure steam at 100° C. As this is all that is necessary, the simpler our apparatus the more satisfactory are our results likely to be. Exception to the aseptic method is often taken on the grounds of the expensive and complicated apparatus which it is thought to require. No greater mistake could be made. Asepticism is simplicity itself compared with Listerism. All the apparatus requisite for carrying out an operation on strictly aseptic lines can be found in any household kitchen. A clean saucepan, some water, and a little washing soda is all that is absolutely necessary. With these we may quickly sterilise our instruments, drainage-tubes, and needles, silk for ligatures and sutures, and lint for mops and dressings. For some time past I have been using a common copper fish-kettle as a steam steriliser, at the bottom of which I put about an inch of water, having previously fixed the perforated fish-lifter or strainer about two inches above the level of the water. I place the kettle on the fire or gas-stove, and as soon as the water boils furiously, put my dressings, loosely wrapped up in a towel, upon the wire grating. The kettle is quickly filled with steam, which escapes from beneath the lid. After the lapse of half an hour the dressings are sterile. Here is nothing that is liable to get out of order; no fallacies can creep in; and yet every

requirement is fulfilled. Of course a simple method like this has its limits. Whilst admirable for a small private practice, it is unsuitable for a hospital, where an apparatus is needed that will sterilise large quantities of dressings at a time. Of such apparatus there is no lack in the market. At present the great majority of them are of foreign manufacture (French or German), the English apparatus being, with few exceptions, mere imitations. From a large number of designs, I have selected for our consideration those which are typical of their class, and of the use of which I have had personal experience.

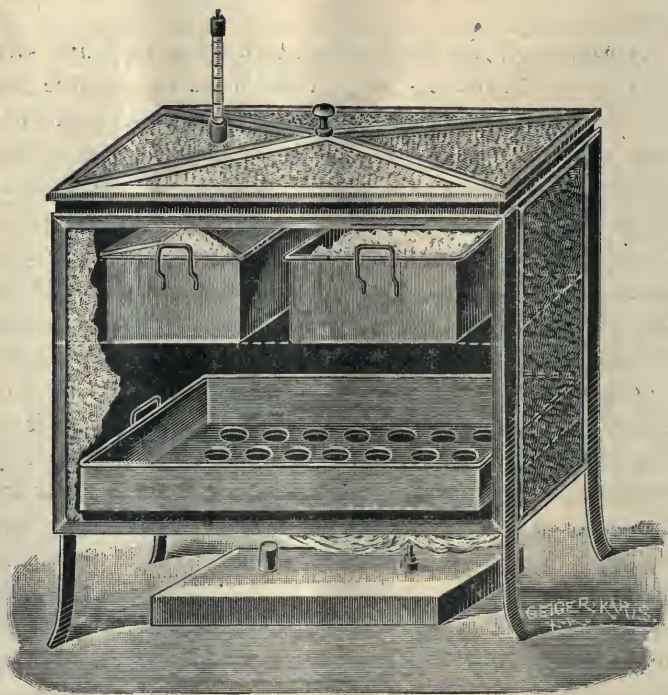


Fig. 1.

Fig. 1 is a sketch of an apparatus designed by Dr. Braatz, formerly assistant to Professor Czerny of Heidelberg. It consists of an oblong box of galvanised iron, which is heated from below by means of a spirit-lamp or gas. At the bottom of it is

fitted a perforated metal tray for the reception of the instruments, if it be desired to sterilise them with the dressings. Above this is a perforated metal shelf, on which rest metal boxes (made of tinned copper so as to prevent rust) containing the dressings. The bottom of these boxes is perforated so as freely to admit the steam. (See Fig. 2.) Sufficient soda solu-

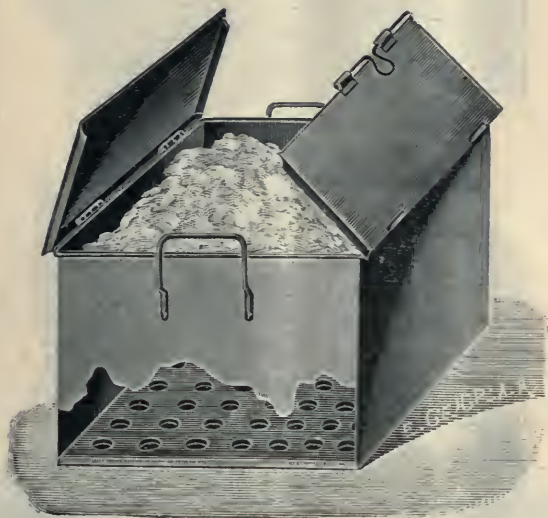


Fig. 2.

tion to cover the instruments is placed at the bottom of the vessel, and the lamp is then lit. The steam escapes from the top.* When the sterilisation is complete, the boxes are taken out, the lids shut, and the perforations at the bottom closed by means of a simple slide. Thus the dressings are protected against dust and re-infection, and can safely be carried any distance.

Fig. 3 shows a somewhat similar, though smaller, apparatus specially designed for ophthalmological work. As it folds together, it is easily transported.

* This apparatus is made by Schmucker of Heidelberg, price £1 to £2

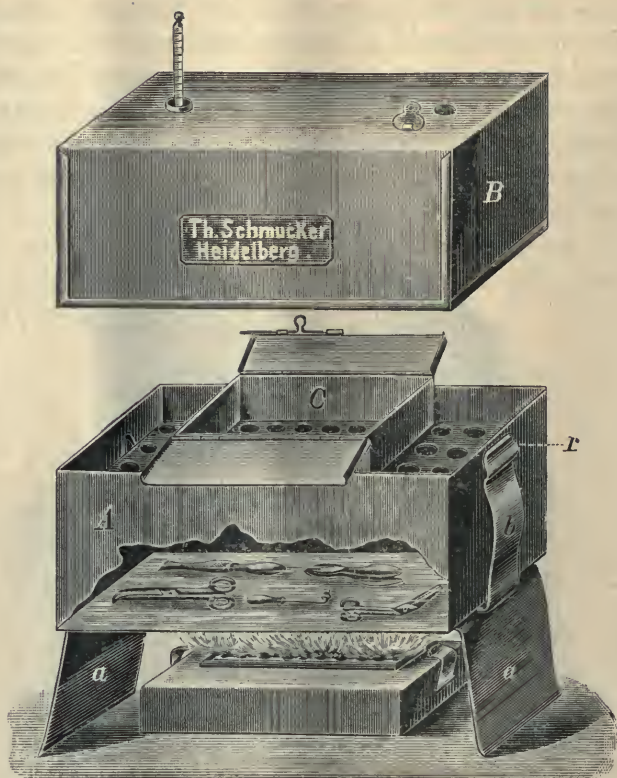


Fig. 3.

In Fig. 4 we have an example of an apparatus, in which the steam is admitted from the top. This is taken from the design of Prof. Merke of Berlin, and is the form used at the Moabit Hospital of that city, and now at the Queen's Hospital in Birmingham. The apparatus consists of two portions, A and B, the former is a wide-mouthed vessel standing upon iron supports, and serves the purpose of holding the water, which is brought to the boiling point by the gas-stove G. The upper portion B consists of two cylinders, one inside the other, the outer one being prolonged below in a conical manner to fit into the water-basin A. The inner cylinder C, in which the dressings are placed, is closed at the bottom, with the exception of the vent-

pipe F; but communicates above with the space between the outer and inner jacket. The outer cylinder is closed by a

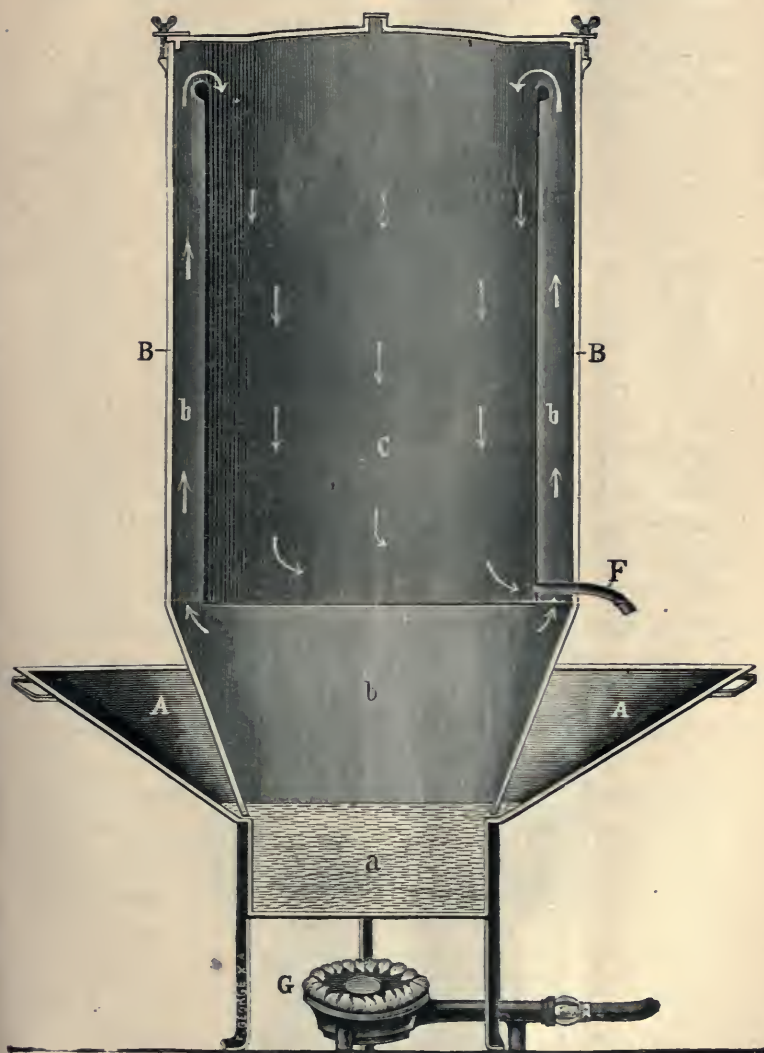


Fig. 4.

tightly-fitting lid, which is fixed by four thumbscrews. The steam given off from the water in A passes up between the outer and

inner cylinders of B to the top, then downwards, permeating the dressings and escaping by the vent-pipe F. The apparatus is strongly made and works most efficiently.* In this case the dressings are placed either in round metal boxes, or, as Prof. Sonnenburg advises, in wicker baskets lined with calico (see Fig. 5). The advantage of the basket over metal cases is that



Fig. 5.

it greatly favours the drying of the dressings, readily allowing the escape of the steam by diffusion. The same firm also makes a larger apparatus suitable for the sterilisation of bedding or clothing, see Fig. 6.

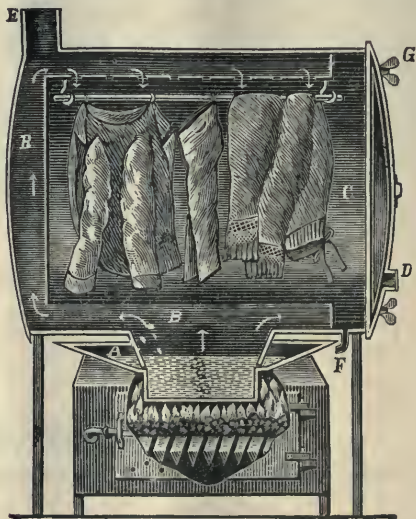


Fig. 6.

* Cost, from £1 to £3 according to size; maker, Fehrmann, Birkenstrasse, Berlin.

The next apparatus to which I desire to draw attention is the one used in Prof. Bergmann's Klinik (Fig. 7). It is somewhat similar

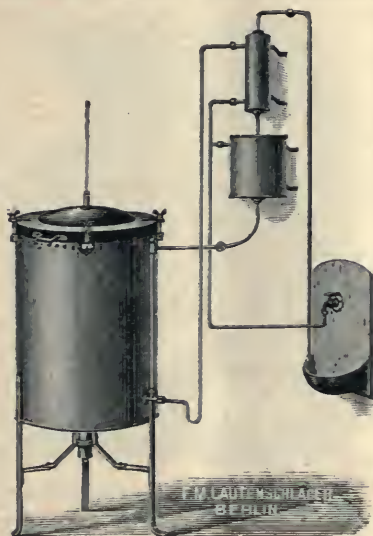


Fig. 7.

to that of Merke, but rather more elaborate, and, being made of copper, is therefore more expensive, the cost varying from £15 to £30. The distinguishing feature of this apparatus is that the water for the production of the steam lies between the inner and outer cylinders, and also that the waste steam, as it escapes from the vent-pipe, passes into a condenser, and thence returns as water into the outer cylinder. Special boxes, as devised by Dr. Schimmelbusch, for holding the materials to be sterilised, are supplied with the apparatus. As the illustration (Fig. 8) shows, there are holes, through which the steam



Fig. 8.

enters, which can be tightly closed after sterilisation. It is claimed on behalf of this apparatus that, before the water between the outer and inner cylinders comes to the boiling point, the contents of the inner cylinder are already warmed, thus preventing them from becoming damp through the condensation caused by the hot steam coming in contact with cold dressings. Personally, I attach but little importance to this; for I find that even in the case of the simple fish-kettle steriliser, already described, the dressings are not really wet, unless they are allowed to touch the sides of the vessel and so directly absorb the water from the condensed steam. It is true that immediately after being taken from the steriliser the dressings are slightly damp, but the water rapidly evaporates from the hot material, and in a few minutes the dressings are quite dry. Moreover, there is no reason why our dressings should be absolutely free from moisture when used, provided only that they are not sodden. Nevertheless it must be conceded that this apparatus works most efficiently, and, where expense has not to be taken into consideration, may confidently be recommended.* It is open to question whether it is not preferable to have several smaller sterilisers in the various wards, under the direct supervision of the surgeon, rather than one large steriliser for the use of the entire hospital, thus ensuring that each nurse shall be thoroughly conversant with the details of sterilisation.

Apparatus for the Sterilisation by Boiling.—Where a special apparatus is desired for sterilising instruments by boiling, Fig. 9 shows an extremely convenient form. The vessel is filled to the depth of an inch with alkaline solution, which is brought to the boiling point in about five minutes by means of a powerful gas-jet. The instruments are then laid on the tray, which is put into the boiling solution. There they remain for five minutes, after which they are ready for use.

Apparatus for Sterilisation by Hot Air.—So many reasons have been already urged against the use of hot air as a sterilising agent, that it is unnecessary to consider at any length this kind of

* The maker of this steriliser is Lautenschläger, Ziegelstrasse, Berlin.

apparatus. But for those who, nevertheless, prefer this method for any reason (and it may be noted *en passant* that the idea

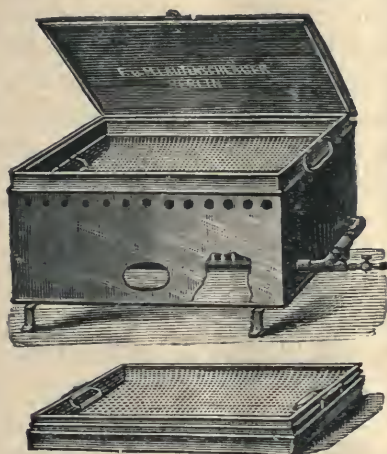


Fig. 9.

appears to be gaining favour that by its means catgut may efficiently be sterilised), I would mention the apparatus of Lautenschläger as being the best I have met with. (See Fig. 10.)

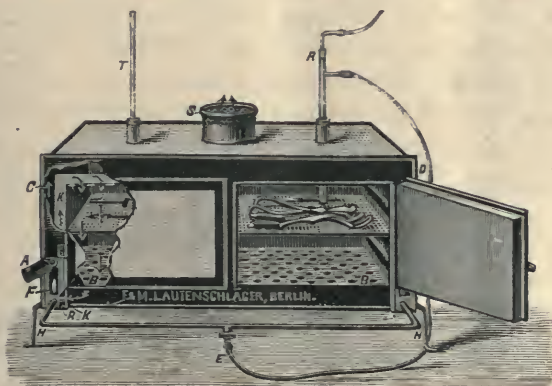


Fig. 10.

Here the sterilisation is effected by a current of hot air. The apparatus is heated at the side and not at the bottom, as is usual, so as to maintain as far as possible an equal temperature

throughout. The illustration will show clearly both the structure of the vessel and its mode of operation.

I have thus endeavoured to present as briefly as possible the salient points in this method of wound-treatment; a method which still opens a wide field for discovery and adaptation, but which in its present state must be ranked as the most effective aid to the surgeon, by which he may evade the evil effects of bacterial activity that so greatly complicate and hinder healing processes.

REPORTS OF CASES.

LYMPHO-SARCOMA OF THE TONSIL. REPEATED REMOVALS WITH VERY RAPID RECURRENCE.

BY W. CHARNLEY, M.D.

SURGEON TO THE EYE, EAR, AND THROAT HOSPITAL, SHREWSBURY.

THE following case seems worthy of record, both on the ground of its pathological and its clinical interest.

The patient, an old man of 73 years of age, came to the Eye, Ear, and Throat Hospital, Shrewsbury, complaining of difficulty of breathing and swallowing. This had been so for three months, he said. On examination, a spherical tumour, the size of a Tangerine orange, was seen, almost completely filling up the fauces. Its colour was, on the whole, dirty pink; but in parts it was ash-coloured, as if from superficial sloughing. It had a narrow pedicle. There were no enlarged glands; and the general health was not much affected, except that the patient was weak from lack of sufficient food, the growth causing great difficulty in swallowing.

On March 28th, 1895, preparations were made for the removal of the growth. A ligature of twine was first put on the

pedicle, in view of the expected free hæmorrhage, my intention being to afterwards remove the growth with the galvano-snare. When the ligature was drawn tight, however, the tumour, to my surprise, came away at once. There was very trifling hæmorrhage, and in a couple of days the patient was apparently well. He was able to swallow easily and to breathe freely. On April 4th he was sent home to all appearance quite cured.

The tumour had the naked-eye look of a sarcoma, and of a rapidly-growing one. It weighed six drachms. Dr. Webb, of Ironbridge, was good enough to examine it for me with the microscope; and he reported that it was a lymph-sarcoma of a rapidly growing type with foci of necrotic tissue scattered through it. I was then fully prepared for its speedy recurrence; but I confess I was surprised when he presented himself again on April 27th with the tumour as big as ever. It again completely filled the fauces, and caused the same difficulty in swallowing and breathing as before. It was again removed; this time being merely torn off with the finger. It was effectually got rid of in this way, and again with very little hæmorrhage. On May 24th it had grown to its original size again, with the same symptoms; and on this date was cut off with a stout copper wire. This was found to be a simpler and less painful method than the former ones. He was again sent home relieved; but no doubt will come back soon with another recurrence. His general health remains pretty good, but these repeated operations must impair it in time. On this last occasion the tumour weighed five drachms. There seems to be no treatment beyond repeated palliative removals. There was little pain throughout. Tumours of the fauces of any kind are not common. The most frequent is the Lympho-sarcoma. Epithelioma is much rarer. The narrow pedicle in this case seems a point worthy of notice.

PERISCOPE.

DISEASES OF THE DIGESTIVE SYSTEM.

(Concluded from the February Number)

PROFESSOR MORITZ, of Munich, gave the results of his observations on the propulsion of food from the stomach, at the meeting of German naturalists and physicians, at Vienna, in September, 1894. These results may be shortly summarised thus:—

Water is very quickly passed on from the stomach into the intestine, about nine-tenths of the water ingested being thus disposed of within three-quarters of an hour. Aerated, acid, and alkaline waters, soup, milk, beer, and oil were all moved into the intestine much more slowly than pure water. This delay is in part due to the fact that the latter fluids provoke a considerable amount of acid secretion from the stomach glands, whereas water pure and simple produces hardly any acid gastric secretion. The author supposes that the acid secretion inhibits the motor efforts of the stomach. Soups, and foods of gruelly consistency produced a particularly strong acid secretion, and were, moreover, passed out of the stomach more slowly than might have been expected from their fluidity. Furthermore, the passage of water from the stomach was greatly delayed by the simultaneous ingestion of solid foods (carbohydrate and proteid).

Dr. Moritz further draws attention to these facts—viz. : That the quick extrusion of water from the stomach without the provocation of any strongly acid secretion must promote the absorption of poisons [probably chiefly micro-organic] introduced with drinking-water, and that the more highly intoxicating effect of alcohol, when taken without food, may be explained by the rapid progress of this material into the intestine as contrasted with its slower passage when taken together with

food. [This does not appear to agree perfectly with the much slower elimination of beer from the stomach, as observed by Moritz, in comparison with that of water.]

At the meeting of 1893 the same author had equated his observations on this subject carried out on dogs in which a duodenal fistula had been made just beyond the pylorus. These results corresponded accurately with those now observed in man by removing the gastric contents at varying times after ingestion. Very little, if any, direct absorption even of pure water occurred from the stomach.

At the same Congress Professor Martius, of Rostock, described the results which he had obtained regarding the size and position of the stomach by means of the diaphanoscopic method. These results are : that the healthy stomach when empty always reaches as low as the umbilicus ; when full it descends still lower. The lowest normal limit is indicated by a line joining the two summits of the iliac crests. In the erect position the limit descends further three or four centimetres. The enlargement when the stomach is filled is marked chiefly towards the right, and very great size of the stomach may be observed without any subjective disturbances. Martius further holds that morbid symptoms are entirely due to insufficient motor power of the organ, and that a low position of the inferior border is not sufficient to permit of the diagnosis of morbid changes in the stomach. He is of opinion, furthermore, that cancer of the stomach in the early stages cannot be diagnosed by diaphanoscropy, but that the exact seat of a growth of some size may be determined by this means.

Dr. Lasniée (*Progrès Méd.*, March 16, 1895) draws attention to papaine as a digestive ferment of great value in the treatment of most cases of disordered chemical pepsin of the stomach. This vegetable enzyme resembles pepsin completely, excepting in the fact that it is capable of acting in neutral and even in feebly alkaline solutions. It has, further, the advantages of preserving its powers for a long time, acting with certainty, and when given in small doses ; and of being devoid

of the unpleasant taste and smell which renders many of the pepsin preparations intolerable to the patient.

Besides recommending the remedy for the indigestive troubles of adult patients, Dr. Lasniée advises its employment in conditions of infantile gastro-enteritis and all the diarrhœic conditions of common occurrence in children.

The preparations recommended by Dr. Lasniée are those made by M. Trouette-Perret, pharmaceutical chemist, of Paris.

Professor A. Pitres (in the *Progrès Méd.*, Dec. 29th, 1894) deals with the subject of hysterical borborygmi, which, though in the author's judgment due to a nervous condition, may well be dealt with in this periscope. Pitres describes three forms of borborygmus or spontaneous gurgling sounds, due to the movements of gas and liquid in a confined space, as occurring in hysterical subjects. Firstly, irregular arhythmical borborygmi, produced by motion or occurring as the forerunners of violent hystero-epileptic fits; secondly, borborygmi audible during hystero-epileptic seizures; thirdly, rhythmical borborygmi, produced by the respiratory movements, ceasing when the breath is held, and occurring in hysterical subjects from time to time, independently of any convulsive seizure. It is with this third class that Pitres deals in his paper. The symptom is far from uncommon. The writer quotes a case reported by Lecorché and Talamon, and proceeds to mention two cases in his own practice. The common features of these three cases are the following:—

The patients were all young women, aged between 16 and 17, when they first came under observation, and enjoyed, apparently, good health. Beyond the inconvenience of the noise, they seemed unaffected by the borborygmus. All three were more or less neurotic, and two presented marked concentric contraction of the field of vision. In one of the girls this was the only symptom of hysteria, and her general health was excellent. The two others were the subjects of hystero-epileptic fits and other symptoms of unstable innervation. In one the mental condition was profoundly altered. The borborygmi

in all cases came on suddenly, without warning, and ceased as suddenly. They were always greatly influenced by position, being generally less marked and often ceasing instantly when the patient lay flat on her back. The seat of production of the noise was always the left hypochondrium, with extension into the epigastric region. The end of the attack was signalled in each case by small eructations of gas, odourless and inoffensive, but in none of the instances quoted was there any general distension of the abdomen, though the epigastrium was occasionally rather prominent and over-resonant. Holding the breath stopped the noise; and volitional alteration of the respiratory act modified the degree and character of the sounds. In all cases the movements of fluid could be appreciated by the hand applied to the abdomen, and splashing sounds could also during the seizure be elicited by percussion. The attacks in one patient recurred at regular intervals daily, apparently without reference to the ingestion of food; in another patient the smallest quantity of food would bring them on; and in the third this point is not mentioned.

In all cases observed by Pitres this distressing symptom lasted for years and caused much unhappiness to the sufferers, and the author has found no treatment that will with certainty even palliate the condition, but appears to place his strongest hopes of success on the electric current and on psycho-therapeutic methods and hypnotic suggestion.

As regards the seat of production of these borborygmi Pitres suggests that they may originate either in the stomach or in the colon near the splenic flexure. Their following, in a good many cases, directly upon the ingestion of food seems to point to the stomach as their seat; on the other hand, it was easier experimentally to produce similar sounds in the cadaver by ligaturing the colon than by ligaturing the stomach. This question of seat of origin he feels unable to decide at the present time.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

The sixth meeting, held in the Medical Institute on Friday, April 26th, at 8 p.m., Dr. MALINS in the chair.

Senile Gangrene of Foot ; high amputation ; recovery.—Mr. F. Marsh related this case. The patient, a man aged 62, was admitted into Queen's Hospital on November 16th, 1894, with senile gangrene of the left foot. No pulsation could be felt in the tibial arteries, and the internal saphenous vein was thrombosed up to the level of the internal condyle of the femur. The gangrene was slowly spreading, so amputation through the lower third of the femur was performed on November 23rd. Primary union was obtained, and the patient made a rapid recovery.

Recurrent Adenomata of Larynx ; thyrotomy.—Mr. F. Marsh showed some large multiple adenomatous growths removed by thyrotomy from the larynx of a woman, aged 23, on April 20th. Twelve months ago he had removed similar growths by thyrotomy, and a microscopical examination showed them to be adenomatous. A month after the operation recurrence was noticed, and large doses of arsenic were given, which, for a time, seemed to have a beneficial effect. During the last six months the growths had slowly increased in size, and lately had caused much dyspnoea. Intra-laryngeal removal had not been attempted, both on account of the situation of the growths—chiefly below true cords in anterior commissure—and from want of self-control on the part of the patient. A long median incision was made exposing the upper rings of the trachea, which were divided and a rubber tube inserted for the further

administration of chloroform. The thyroid cartilage was then divided, and the presenting portion of growth removed. Two small pieces of sponge with silk attached were then packed round the tracheal tube, to prevent the downward passage of blood, the rest of the growth was ablated, and the points of attachment cauterised with the actual cautery. The thyroid cartilage was sutured with silkworm gut, and a rubber tracheotomy-tube was left in the tracheal opening, in case of possible recurrent hæmorrhage—the bleeding having been troublesome during the operation. No complications however had occurred. The tube was permanently removed on the fourth day, and the patient was making a good recovery.

Melanotic Sarcoma of Liver.—Dr. Codd showed a specimen of melanotic sarcoma of liver, the growths breaking down and forming large cystic masses. The tumour was noticed eight months ago in the umbilical region, and since has gradually enlarged. There was some pain in the right flank a fortnight before admission. On admission the abdomen was much enlarged, being thirty-four inches in circumference at the umbilicus. A tumour occupied the whole of the front of the abdomen, which was completely dull except just above the pubes, and in the left flank one large well-defined projection near the umbilicus readily fluctuated. There was a larger but less defined mass occupying the epigastric region, and other cystic bodies in the right flank. Vaginal examination revealed nothing. The uterus not felt bimanually. Diagnosed as polycystic ovarian cyst, and abdominal section was performed by Mr. Hunt, and a smooth, dark-coloured cyst with large vessels on its surface presented. A small trocar was inserted and immediately blocked with grey shreddy material of which the cyst appeared to consist. Gall bladder found close to the pelvis on the under surface, and the tumour found to be in the liver. Abdominal wound closed, and patient died the next day.

The liver weighed 13 lbs. 10 oz., and contained about six large masses, readily fluctuating, and containing the grey semi-solid material. Several small growths also were seen, from the

size of a pea upwards, some black, others white, the former all showing a tendency to break down. Growths were also found in the heart, pancreas, right kidney, and right lung; the one in the heart involving the whole thickness of the right ventricular wall and softening. Subsequent enquiry showed that the left eye had been removed by Mr. Chesshire in 1890, for growth.

Extra-uterine Gestation.—Dr. Malins showed a specimen of extra-uterine gestation. The patient, æt. 28, had five children, the youngest 16 months old. She menstruated for the first time after this confinement in October last, again three weeks afterwards, and at Christmas time it recurred with violent pain, since which the discharge continued until she came to Birmingham on March 5th. There was then found a mass in the pelvis pushing the uterus to the left, and appearing above the brim. The abdomen was opened on March 6th. The space occupied on the right of the uterus was filled with recent clots; at the bottom of it was a foetus six inches in length, and a flattened adherent placenta. There was profuse bleeding, a ligature was placed over the uterus, the space being packed with iodoform gauze, after being cleared out as far as possible, with the placenta. The patient lived thirty-two hours, dying from shock and exhaustion, attributable in great measure to the effects of a long railway journey on the day before the operation which evidently gave rise to bleeding inside the sac.

Uterus removed by Vaginal Hysterectomy — Dr. Purslow showed uterus removed by vaginal hysterectomy. The patient, aged 47, had been suffering from hæmorrhage and discharge for six months, and was rapidly losing flesh. There was a small malignant growth in the cervix; the uterus was free from adhesions. The whole organ was removed, the broad ligament being tied in sections with silk, and the ends of the ligatures left long. The last of these came away on the sixteenth day. The patient made a good recovery.

Patient after Thyrotomy for Laryngeal Papillomata.—Mr. Heaton showed a boy, aged 10, on whom he had performed thyrotomy for the removal of multiple papillomata of the larynx.

The boy had suffered from suffocative attacks of dyspnoea, with hoarseness and almost complete aphonia, for several years. A year previously tracheotomy had been performed for one such attack. Tracheotomy was performed and, a week later, the larynx opened. The trachea was plugged below with a sponge. Seven small papillomata and one large one, growing from the left false cord, were removed. The boy was shown, and had a very good voice, and had entirely lost all his dyspnoea. Mr. Heaton laid stress on the necessity of an external operation in such cases, partly owing to the small size of the larynx, and partly because it was the only way in which multiple small growths could be thoroughly and completely removed and their bases cauterised.

Extreme Dilatation of the Vagina in an Infant.—Mr. Heaton showed the pelvic organs of an infant, aged 6 weeks, who had died with a large pelvic and abdominal cystic tumour. The cyst, which was the size of a large melon, had the bladder attached to the front surface of it, the rectum behind, and communicated above with a small but dilated uterus. The uterine appendages, kidneys, and ureters were normal. The cyst caused death by retention of urine. The walls were composed of unshaped muscular tissue and elastic fibres, and were buried by stratified squamous epithelium. Mr. Heaton regarded it as an imperforate vagina which, owing to a chronic inflammation, had become greatly enlarged and distended. Such a malformation extremely rarely caused symptoms before the age of puberty, and rarely attained such relative proportions. The cyst during life reached up to the costal margin. The specimen was referred to a committee to examine and report upon it.

Angular Curvature of the Spine.—Mr. William Thomas showed a case of angular curvature of the spine occurring in a girl 18 years of age, in order to illustrate his method of treatment of angular curvature by the spinal vest. The vest consists of a splint of Swedish iron, strong enough to support the spine, but so soft that it could easily be moulded to any shape. It was formed of two narrow bars of iron which, when applied,

rested on the articular processes of the vertebræ on each side of the spines, the bars being connected above and below by cross pieces. After being carefully fitted to the spine, padded, and covered, it was firmly sewn into a vest of stout jean, fitted with eyelets in front, by means of which it could be firmly laced to the patient. He had used the vest now for several years, and claimed for it advantages over either the poro-plastic jacket or Sayres' plaster case. In the case shown, the patient had almost lost all power of movement in the lower extremities ; but although she had only worn the vest about a fortnight, she could walk in it fairly well.

MIDLAND MEDICAL SOCIETY.

The eighth ordinary meeting of the Midland Medical Society was held on Wednesday, March 20th, the President, Mr. T. F. CHAVASSE, in the chair.

Dr. Leslie Phillips presented a man aged 30. Four years ago a squarish bald patch came on the occipital scalp upon which hair has never since grown and which is now hide-bound. Two years later, at the vertex appeared a round patch apparently of alopecia areata. The hair has grown here, but a curious ring of baldness exists around it on which pale-coloured hair is now growing. A similar horseshoe-shaped patch exists at the occiput and a band over the right ear ; this latter gives the impression of partial adhesion to sublying tissue, and pressure here causes pain at the nape. In the right cheek is a vertical band of apparent sclerodermic infiltration. The disease was apparently circumscribed scleroderma simulating alopecia areata, and if this view of the case was correct the re-growth of hair on one patch was notable. The alternative, but less probable, diagnosis given was that morphea and alopecia areata coexisted.

Violinist Palsy.—Dr. Short showed a man with violinist's palsy. The patient, aged 26 years, was a jeweller by trade, using his hands for fine work during the day, and for several

years he had practised the violin in the evening. He first noticed a sense of numbness between the ring and little fingers of the left hand followed by weakness of the arm and hand so that he had to rest his elbow on his knee when playing. The marked features of the case were the absence of spasm or cramps, and the rapid wasting of the thenar, interosseous, and lumbrical muscles. He had been under treatment by massage and electricity for about two months with marked improvement in the muscular power of the hand.

Uterus from a Case of Hysterectomy.—Mr. John W. Taylor showed a uterus, the seat of malignant disease, which he had recently removed by Doyen's operation of vaginal hysterectomy. In this operation the broad ligament is secured by two pressure forceps with elastic blades, and a considerable portion of the ligament may be removed on each side of the uterus without danger of injury to the ureters.

Epithelioma of the Eyelid.—Mr. Wood White showed a middle-aged woman with a large fungating epithelioma of the left eyelid. The growth had invaded the outer half of each lid, and extended on to the cheek. It had been slowly growing for six years.

Dr. Douglas Stanley showed cultures, in various stages, of the Höeffler diphtheria bacillus.

Mr. Henry showed a number of mounted specimens illustrating injuries and diseases of the eye.

Dr. T. Nelson read a paper on "Some Points in Invalid Dietetics," in which he reviewed the possibilities of the kitchen in providing a more varied diet for those suffering from fevers, gastric and liver disorders, and other affections. He pointed out the usually perfunctory directions of the medical attendant, and gave examples of dietaries with methods of preparation of various food-stuffs, and concluded by urging some form of instruction in the principles of cookery for medical students as a necessary accompaniment of success in practice.

The President, Drs. Short, Stanley, Purslow, Johnstone, Kirby, etc., took part in the discussion.

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held on February 8th, 1895, Mr. S. STRETTON in the chair.

Mr. J. L. Stretton read notes of a case of castration for enlarged prostate. The patient, aged 60, had for some months had difficulty in passing urine and, under advice, had been using a catheter, and during the last six weeks had not passed any urine except by catheter. On January 4th, 1895, when first seen, he was healthy looking. A No. 8 catheter entered the bladder easily. Per rectum, the prostate could be felt as large as a hen's egg. The right testicle was enlarged and nodular in places; the urine contained a considerable quantity of pus. In spite of regular washing out of the bladder, the patient did not improve, and on January 15th both testicles were removed by a single incision. Ten days later he passed urine naturally for the first time. On the 28th he passed eight ounces at one time. The wound was healed. He developed delusions and became very troublesome, and passed his urine in bed. This condition lasted for about a week or ten days, and he then began to improve. The prostate, three weeks after the operation, was much diminished in size. The report on the right testicle showed it to be tubercular.

Notes on a Case of Enterotomy.—H. N., male, aged 55. He had always enjoyed good health. The day before admission he was seized with pain in the abdomen after a meal of bread and cheese the previous night. He endeavoured to evacuate the bowel without success. He vomited constantly, and the vomit became fæcal. He had passed no flatus. Rectal injections—castor oil and opium—had been tried without effect. The abdomen was distended and board like, the pain not localised, and there was no particular tenderness. Pulse small and feeble, tongue dry, temperature normal, breath had a fæcal odour.

On opening the abdomen, there was evidence of slight peritonitis and a small quantity of fluid. The small intestine was

much distended and congested. This was traced in both directions with a negative result. As the patient's condition was bad, a coil of distended intestine was opened and stitched to the abdominal wall. There was a copious discharge of liquid fæces. The following day he was much more comfortable, the distension had disappeared, and he had no pain, but his pulse was bad. During the next four days he several times became collapsed, and, in spite of free use of stimulants, he died in this state on the sixth day.

Post mortem twenty-four hours after death. The bowels were nearly empty. No cause for the obstruction could be discovered, and there were no signs of peritonitis. Mr. Stretton pointed out the difficulty of diagnosis in such cases, and maintained that the operation performed offered the best chance of recovery.

Mr. Bethune showed a large Fibroid about the size of a lemon, removed from a multiparæ aged 37, immediately after the birth of her ninth child. It was attached to the anterior uterine wall immediately within the cervix, and caused considerable obstruction to the birth of the child. It was ligatured and removed with scissors, and no bad symptoms supervened.

Mr. M. Johnston read a paper on "Malarial Fever."

Cerebral Abscess.—Dr. Evans read notes of a case of Cerebral Abscess, which he had operated on as follows:—Louisa P., aged 16. Admitted on October 11th, 1894. Always had fairly good health, no definite diseases, except the ear trouble which began two or three years ago without any known cause; it has since "run matter." One month ago, whilst the patient was at work in a mill, she was suddenly seized with a "fit," in which she remained insensible for two or three hours. The left side of the face, the left arm and left leg twitched during the fit (this was corroborated by the medical attendant), since this time she has been laid up. The headache began three or four months ago and has been "on and off" ever since, but after the fit and since it has become worse. The right internal strabismus has come on since the fit. She has been peculiar and strange in

her manner for about two years. Bowels regular, has only menstruated once, about two years ago. Mother has been in a lunatic asylum twelve years, also the mother's brother. The mother has had several children, but no miscarriages. Some of the patient's brothers are considered "queer" by the neighbours.

On admission.—Patient appears to have lost flesh, lies on the right side, takes no interest in her surroundings, not as a rule speaking unless spoken to, will then answer intelligently, but cerebration is slow. She is very drowsy (but this is probably due to the bromide she has taken). Pupils both widely dilated, equal and react to light and accommodation. She states that sometimes she sees double with the right eye. Her expression varies sometimes, her face expresses pain, at other times there is a far off dreamy look about the eyes. She complains very much of pain in the frontal region, also of shooting pain down the right, and sometimes in the left arm. The pain in the head is always worse at night, and she often cries for sometime with it. There is no loss of power in any of the limbs, and sensation is normal. The plantar and knee reflexes are absent, no ankle clonus. Well-marked optic neuritis in both discs, but the sight is normal, with the exception of the double vision already mentioned. Senses of smell and taste are normal. There is a slight discharge from the right ear. A few drops of thin pus in twenty-four hours, and this has remained the same since the first onset, according to the patient's statement. She hears the tick of a watch one yard off the left ear, but cannot hear it when placed close to the right ear. When placed on the skull in the region of the right ear she can hear it. Temperature normal, pulse 72. All the systems otherwise are normal. To-day she was sick for the first time since admission, but it was directly after the medicine; organic reflexes are normal. There is no swelling, redness, or tenderness over the mastoid regions. Has no delusions, illusions, or hallucinations. A perforation of the right tympanum was discovered on examination of the ear.

Eight days after admission she vomited two drachms of clear fluid; pain in the head and left arm continued severe. Seven-

teen days after admission she suffered from illusions, thought the nurses were black. These continued for two or three days, together with severe pain preventing sleep at night. Hypodermic of one-sixth of a grain of morphine relieved these symptoms. Loss of power in the left arm gradually supervened, and much difficulty was soon experienced in getting her to take nourishment, and she gradually became drowsy and semi-comatose.

On November 3rd a consultation was held on the patient, and it was decided that she was suffering from cerebral abscess, probably in the temporo-sphenoidal lobe, and that an attempt should be made to evacuate its contents.

The patient was accordingly anæsthetised with chloroform, and a semilunar scalp-flap dissected down over the region of the lower part of the right fissure of Rolando. The periosteum having been raised from the bone, the trephine was applied over the region of the motor centus for the face, and on the dura mater being exposed, the brain was seen to bulge into the wound, but there was complete absence of brain pulsation. The dura mater was opened by a crucial incision, and the brain substance probed in several directions with a fine aspirating needle. The needle was eventually introduced in a forward direction for a distance of about two inches and a half, when pus was seen exuding from the end of it. The abscess cavity was then aspirated, and about three ounces and a half of very offensive pus was evacuated. The opening in the brain was then enlarged by means of a long sinus forceps, introduced by the side of the needle, and the little finger was passed apparently into the abscess cavity. A small drainage-tube was next passed down to the bottom of the opening, and the parts well washed out with boracic acid solution. The semilunar flap was replaced, and fastened in position with sutures, an opening being made in its centre for the passage of the drainage-tube. There was free bleeding from the scalp, which was stopped with pressure.

After the operation the patient was at first very restless,

crying out with pain in the head and moving the right arm. The restlessness continued through the night, gradually subsiding towards the morning, when she seemed fairly comfortable and inclined to sleep, taking her nourishment better. The wound was dressed the next day. There had been a good deal of oozing.

On the second day after the operation the note was that the patient had been drowsy the greater part of the night, after a hypodermic of one-eighth of a grain of morphine, and had taken six ounces of milk, one ounce of brandy, and some Valentine's meat juice. This morning she looked bad—dusky complexion. Pulse, 168, weak; respiration, 40; temperature, 100.2° F. Had coughed several times during the night. After this the patient gradually became comatose, and died on the morning of November 7th, the fourth day after the operation. Previous to the operation the temperature was never above normal.

On making a *post mortem* examination, an abscess, the size of a large hen's egg, was found occupying the right frontal lobe. The abscess had a well-defined wall about one-eighth of an inch thick, and in it was found the opening that the aspirating needle had made, but no other opening.

Dr. Evans considered that there were several points of interest connected with the case. In the first place, as to the cause of the abscess, he could only suppose that the condition must have arisen from the ear disease. It seemed to him strange that this abscess should be situated in the frontal lobe, so far from the seat of the original trouble; but in the absence of any history or signs of syphilis, tubercle, or other disease, he could attribute the abscess to nothing else.

The symptoms were not very pronounced, at all events at first. The loss of power in the arm and leg was not at all well marked, and the headache was only severe at times. Of course there was the history of the fit, a solitary one, followed by a slight squint, though the optic neuritis was well marked all the time the patient was under observation. There was very

little vomiting, and, later, some mental disturbance, as evidenced by illusions and hallucinations, but otherwise the faculties and intelligence of the patient seemed little disturbed. It seemed curious that so large an abscess—which, judging from the thickness of its wall, must have been in existence for some time—should have produced such a comparatively small amount of trouble. The diagnosis of the case, too, was thus rendered somewhat difficult; and the fact of the mother and uncle being insane was misleading.

Dr. Evans stated that in future operations he should use an aspirating needle to search for the abscess, as in this case; but having struck the abscess, he would pass a sharp-pointed bistoury down the side of the needle, in order to make sure of opening the wall, and so allowing a free escape for the matter.

In the discussion which followed, it was suggested that had the operation been performed sooner, the patient would have had a better chance of recovery.

Dr. Evans also showed a case of a man who had fallen from an apple tree and sustained a compound fracture of the thigh, the bone projecting through the trousers, and considerable injury to the shoulder, probably fracture of the surgical neck of the humerus, with fracture of the acromion process and of the neck of the scapula. At the time the patient left the hospital he could walk with the aid of a crutch, and there was about three-fourth-inch shortening of the injured leg. He could move his arm in almost any direction, placing his hand on his head without difficulty.

Dr. Evans showed a uterus he had removed *per vaginam* for malignant disease, having first ligatured the round ligaments, through an abdominal incision. The patient died of shock about twelve hours after the operation.

REVIEWS.

THE DYSPEPSIA OF PHTHISIS.*

THIS volume of 200 pages contains a very complete, accurate, and lucid account of the subject treated. Perhaps the most valuable portion is the first two chapters which contain an able survey of the pathology of the condition, in which field Dr. Fenwick has himself done much work both experimentally and in the *post mortem* room.

We read with great interest and pleasure the chapter on the dyspepsia of strumous children. This peculiar form of gastro-enteric catarrh we all recognise in a vague sort of way; but Dr. Fenwick has written so clearly and comprehensively concerning it that the condition stands out in bold relief, the clinical symptoms especially being described with happy accuracy.

But the author himself would, no doubt, tell us that the *raison d'être* of his book lay in Chaps. v. and vi., on "A Form of Dyspepsia which often Precedes the Development of Pulmonary Tuberculosis," and on another variety which usually ushers in and accompanies the first stage. He believes that there is a dyspepsia more or less *sui generis* which often helps to induce phthisis. His words are: "I am quite convinced that there does exist a variety of dyspepsia which is peculiarly apt to be followed by pulmonary tuberculosis, and have little doubt that everyone who has had much experience either in pulmonary or gastric diseases will endorse this opinion." We do not ourselves feel able to give this endorsement, though Dr. Fenwick says much in its favour. Our belief is rather that people who have inherited a phthisical predisposition are apt to suffer from a dyspepsia which is peculiarly modified by the same predisposition which encourages the inroad of the bacilli of

*The Dyspepsia of Phthisis. By W. Soltau Fenwick, M.D. Lond., M.R.C.P. London: H. K. Lewis.

tubercle. The phthisical inheritance is the cause both of the peculiar dyspepsia and of the peculiar pneumonia. In speaking, too, of this precedent dyspepsia, we must never fail to remember that signs of pulmonary phthisis not seldom exist some months before any lung symptoms arise; and, further, it cannot be doubted that bacilli may have been at work a month or two before the pneumonia they set up has afforded the physician any signs for definite diagnosis. This dyspepsia may thus be one of the symptoms of the *latent period* of pulmonary tuberculosis rather than altogether antecedent to infection. However, sometimes it is no doubt a true antecedent and, by weakening an already predisposed individual, renders him still more easy a prey to bacillary attack.

We heartily congratulate Dr. Fenwick on having brought to so successful an issue a work which is evidently the outcome of much pains and steady investigation, and we commend it to all those who desire a larger and clearer view of the intimate connection of phthisis and dyspepsia.

THE TREATMENT AND EDUCATION OF MENTALLY FEEBLE CHILDREN.

IN the treatment and education of mentally feeble children, Mr. Fletcher Beech gives a very short *résumé* of the most prominent mental and physical characteristics met with among idiots and imbeciles, and briefly outlines the treatment which his large experience has taught him to be the best for these unfortunate children.

In the section on treatment, we notice that "meat should be excluded from the dietary of children suffering from epilepsy," though eggs are allowed; and on page 25 we gather that it is the author's opinion that diet has some perceptible influence on epilepsy. It would have been interesting had Mr. Beech given some statistics or detailed observations on this somewhat doubtful point, and had he told us whether any permanent effect on the epileptic tendency can, in his experience be secured by this means.

The writer's opinion of the curative effects of craniectomy is not high; and in such a place as Darenth Asylum Mr. Beech will have had better opportunities of studying the remote results of this operation than most hospital surgeons have.

We are glad to see that Mr. Beech is strongly in favour of treating all mentally feeble children in institutions, *i.e.*, in company with others of the same mental capacity as themselves.

The pamphlet is useful, especially to those who may have to deal with individual cases of imbecility; and here, again, its utility will be mainly in pointing out the line of education which should be pursued.

THE EXTRA PHARMACOPŒIA FOR 1895.

THIS book is so well known that it hardly requires recommendation at the hands of a reviewer. The present volume, like its predecessors, supplies an immense amount of information. The indices are perfect in arrangement, and are of the greatest help to the busy practitioner.

We wish specially to direct attention to the very fully written chapter on antitoxins, which shows what is at the present time being done in this branch of therapeutics, and gives information as to where the antitoxic preparations may be obtained, and wherein those from various sources differ among each other. The literature on this subject is exhaustively referred to.

Among the test-solutions we notice the omission of phloroglucin-vanillin as a test for free hydrochloric acid.

ATLAS OF THE NASAL CAVITY AND SINUSES.*

THIS Atlas consists of sixteen plates engraved by Matoloni, of Vienna, from photographs of sections carefully prepared and selected to display the relations of the nasal cavity and its accessory sinuses with neighbouring structures.

* The Anatomy of the Nasal Cavity and its Accessory Sinuses. An Atlas for Practitioners and Students. By Dr. A. Onodi. Translated from the second edition by St. Clair Thomson, M.D. Lond., F.R.C.S., M.R.C.P. London: H. K. Lewis. 1895.

The utility of the work has been increased by Dr. St. Clair Thomson, who has considerably enlarged the explanation which faces each plate. The engravings are excellent, and, more important still, are true to nature. The book is one that can be commended to all wishing to acquire a practical knowledge of nasal anatomy.

FROTHINGHAM'S LABORATORY GUIDE.

MR. FROTHINGHAM'S Laboratory Guide for the Bacteriologist is a useful little book for those who are already acquainted with the principles of the microscopic examination of bacteria, and who may wish to have ready at hand a list of the main staining and chemical agents required in such manipulations. Mr. Frothingham gives useful hints about time-saving and about the arrangement of a laboratory, all of which may be recommended. The two plates are good. The book is written mainly from the point of view of a veterinarian.

CORRECTION.

In our review of Schimmelbusch's Aseptic Treatment of Wounds, the word "antiseptic" was, by mistake, substituted for "aseptic."

New Inventions, Drugs, etc.

SPECIMENS RECEIVED.

From Messrs. BURROUGHS, WELLCOME, & Co., specimens of Residuum Rubrum, Thymus Gland, Dried Sulphate of Iron, Zymine, or pancreatic extract and permanganate of zinc, each in tabloid form.

From Mr. W. A. MANNING, Wylde Green, a specimen of Bronchi-fume, a powder to be ignited and inhaled for the relief of asthma. The composition of this remedy has been communicated.

From Messrs. DOMEIER & Co., London, samples of Lactophenin and of Ferratin, the former an antipyretic, and the latter an organic iron-compound, prepared synthetically. Both these preparations are manufactured by Messrs. C. F. Boehringer and Sons, Waldhof, near Mannheim.

New Books, etc., Received.

- The Surgical Diseases of Children and their Treatment by Modern Methods. By D'ARCY POWER, M.A., M.B., F.R.C.S. Illustrated. London: H. K. Lewis. 1895.
- Lecture on Diseases of the Spinal Cord. By Dr. PIERRE MARIE, Deputy Professor at the Faculty of Medicine of Paris, Physician to the Hospitals. Illustrated. Translated by Dr. Montague Lubbock, F.R.C.P. London: New Sydenham Society. 1895.
- Medical Handbook of Life Assurance, for the use of Medical and other Officers of Companies. By JAS. EDWARD POLLOCK, M.D., F.R.C.P., and JAMES CHISHOLM, Fellow of the Institute of Actuaries. Fourth edition. London, Paris and Melbourne: Cassell and Co. Ltd., 1895.
- A New Method of Inhalation for the Treatment of Diseases of the Lungs. By W. H. SPENCER, M.A., M.D., M.R.C.P., Consulting Physician to the Bristol Royal Infirmary. London: The Scientific Press Limited. 1895.
- On the Relation of Diseases of the Spinal Cord to the Distribution and Lesions of the Spinal Blood-vessels. By R. T. WILLIAMSON, M.D., M.R.C.P., Medical Registrar at the Manchester Royal Infirmary. London: H. K. Lewis. 1895.
- The Extra Pharmacopœia. By WM. MARTINDALE, F.C.S., and W. WYNN WESTCOTT, M.B. Eighth edition. London: H. K. Lewis. 1895.
- A Manual of Gynæcological Practice for Students and Practitioners. By Dr. A. DÜHRSEN, Privat-Docent in Gynæcology in the University of Berlin. Translated from the Fourth German edition by John W. Taylor, F.R.C.S., Surgeon to the Birmingham Hospital for Women, and Fred. Edge, M.D., F.R.C.S., M.R.C.P., Surgeon to the Wolverhampton Hospital for Women. Illustrated. London: H. K. Lewis. 1895.
- The Treatment and Education of Mentally Feeble Children. By FLETCHER BEACH, M.B., F.R.C.P. London: J. and A. Churchill. 1895.
- The General Hospital, Birmingham. Statistical Report of In-patients for the year ending December 31, 1894.
- The Sick Poor in Workhouses. Reprinted from the *British Medical Journal*, with an Appendix of Summaries and Comments by ERNEST HART, D.C.L. Second series. London: Smith, Elder and Co. 1895.
- Indurative Mediastino-Pericarditis. By THOMAS HARRIS, M.D., F.R.C.P., Physician to the Manchester Royal Infirmary, etc. Reprinted from the *Medical Chronicle*. London: Smith, Elder and Co. 1895.
- Report of the Council of the Dublin Sanitary Association for 1894, with the President's Address. Dublin. 1895.
- Derby Borough Asylum. Sixth Annual Report. 1894.
- Year-Book of the Scientific and Learned Societies of Great Britain and Ireland. Compiled from Official Sources. Twelfth Annual Issue. London: Charles Griffin and Co. Limited. 1895.

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ORIGINAL COMMUNICATIONS.

RATIONALISM IN THE STUDY AND PRACTICE
OF PHYSIC.*

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GENTLEMEN,—

My first desire is to thank you for the honour you have conferred upon me in calling me to preside over this Branch for the ensuing year. It is indeed a gratifying distinction to occupy a position which carries with it so much dignity, by the suffrages of those amongst whom I have worked for well-nigh twenty years; and I gratefully appreciate it as a mark of your confidence. At the same time, I am forcibly reminded of that invariable law of human life in accordance with which every privilege is indissolubly bound up with correlative duties; and the duty which now falls to my lot, in conformity with time-honoured tradition—namely, to deliver an inaugural address—is by no means one which I undertake with a light heart or unqualified confidence. Nevertheless I will do my best, and trust to your indulgence.

I propose to bring under your notice some fragmentary reflections on the rôle of rationalism in the study and practice of medicine. By this term “rationalism” I refer not to any

* Address delivered at the Annual Meeting of the Birmingham and Midland Counties Branch of the British Medical Association, June 13th, 1895.

doctrine or set of doctrines, but to an intellectual temper—an attitude of the mind which dominates the worker in relation to his work, which influences his work, and gives a definite character to his results. It is a mental attitude which recognises a right and a wrong way of approaching even the simplest things, and nourishes the desire to take the right way, or at least to avoid the wrong way, though at the risk of temporarily standing still. It is a mental temper, in which the results of observation are submitted to the crucible of reasonable reflection with a view to educe some general principle—some general truth or law. The rational spirit recognises no method but that which will stand the criticism of common sense. Rationalism is, in short, the exercise of common sense in an uncommon degree. It is by virtue of these characteristics that we are able to claim for modern medicine a position which is really and truly scientific—a position, indeed, which is scientific just so far as it is rational.

Modern medicine is built upon the rational foundations which have been patiently and laboriously laid by the Fathers of Medicine in the past; and, but for their triumphs, pungent satire and mordant criticism would long ere this have relegated the healing art to the limbo of forgotten superstitions. Yet ridicule and contempt have served rather to stimulate than to weaken the search after truth, and to-day the science and art of medicine emerge with more vigorous life, and in the enjoyment of a larger share of public confidence than at any previous period of the history of the world. Nevertheless, the voice of carping criticism is not silent, and assertions are still made that modern medicine is unscientific. But, gentlemen, I would ask what is science but the application of trained and organised common sense to the observation and elucidation of phenomena? The common sense on which the student of science relies in the observation, measurement, comparison, and judgment of the special phenomena with which he has to deal, is identical in every way with the common sense which guides us all in the affairs of every-day life. Science is not mere know-

ledge, but knowledge made fertile by union with common sense. Science without common sense amounts to nothing more than vain and barren sciolism. This is the sort of science which is referred to in that delightful work of our lamented professional brother, Dr. Oliver Wendell Holmes, in his *Poet at the Breakfast Table*, where the Master says : " Science is a first-rate piece of furniture for a man's upper chamber if he has common sense on the ground floor." And again a little further on, in speaking of doctors in their treatment of patients, he says : " The men that have science only, begin too far back, and before they get to the case in hand, the patient has very likely gone to visit his deceased relations." We still meet with far too much of this kind of science, falsely so called, which is begotten of too much book work without the ballast of practical experience. So long as we bring to bear a shrewd common sense upon the examination of our patients, the observation of signs and symptoms and the interpretation of the disturbance on which they depend, and so long as we exercise the same common sense in the selection of remedies with the effects of which we are daily becoming more familiar, we may claim that our methods are as rational and scientific as those of the student of astronomy, geology, or chemistry.

Again, it is said that medicine is inexact. But I contend that the conclusions or facts of anatomy and biology, on which the superstructure of medicine so largely rests, are as exact in their way as those of mathematics ; and the statement is equally true of medicine itself. For instance, that an acute fever is set up by the growth and development of micro-organisms within the body, that scurvy is produced by a deficiency of fresh food, that acute pneumonia runs a cyclical course, and that malaria can be cured by quinine, are facts as incontrovertible as any facts in the whole range of physical science. But if the charge of inexactness when applied to medicine means nothing more than that many of its laws are still imperfectly worked out, and that many of them are as yet altogether unknown ; or if it means that by reason of the complexity of its subject-matter,

and the number and variety of interfering conditions, we are in many cases only able to forecast with approximate probability the results which will occur under given conditions, it is a charge which is applicable in a greater or less degree to every science known by man. It cannot be too strongly emphasised that such shortcomings relate merely to the accidental circumstances of our work, and in no way affect its essential character.

Professor Huxley many years ago, in one of his addresses, criticised in his usual forcible style an alleged difference between biological science and all other sciences, which was regarded by no less an authority than Dr. Whewell as fundamental—namely, that in biology “the class is determined not by a boundary-line without, but by a central point within; not by what it strictly excludes, but by what it eminently includes; by an example, and not by a precept; in short, that, instead of a definition, we have a type for our director.” The Professor asserted that, in so far as this was true, it was due to a mere accidental and temporary imperfection in our knowledge, and was not one of its essential features; and that, so far as grouping by type was adopted in place of strict definition, it was admittedly only for the sake of convenience, until our knowledge had advanced sufficiently to make definition possible. It is certainly true that, until lately, our nosology was originally drawn up exclusively on the principle of conformity to type; but the barrier has been broken down, and many diseases—of which tuberculosis is an example—are now capable of rigorous definition.

The methods of all sciences are the same, and consist of (1) observation, (2) comparison and classification of observations, (3) generalisation, and (4) verification; and it is no figure of speech to assert that the methods of modern medicine conform to this test in all essential respects. Let us take typhoid fever as a single example. Simple observation teaches us that in the presence of defective drainage, a continued fever is apt to occur, which can be rigidly distinguished by signs, symptoms, and anatomical lesions, from all other febrile disorders; we observe that persons living outside the insanitary area may be

attacked, if allowed to drink water which flows from it or near it; and lastly, we observe that the disease is liable to be communicated by those suffering from it to healthy persons, if the former are not kept scrupulously clean, and especially if not kept free from stercoral contamination. So much for observation. Then by comparison and classification of our observations, we arrive at the following conclusions:—(1) That the fever is due to some definite cause associated with defective drainage; (2) that this cause is something which can be carried about in water; and (3) that probably it has some definite relation with the dejecta of those already stricken with the disease. Finally comes the verification, when on the occurrence of several cases in different places at the same time, under a variety of conditions, only agreeing in the fact that all have been supplied with milk from the same source, served in vessels which have been washed out with water tainted with sewage.

A contrast is often drawn between rational and empirical medicine as if they involved a natural antithesis. There is no more fruitful source of fallacy than the practice of assuming an antithesis and then attempting to bring under it all knowledge relating to the subject under consideration. As a matter of fact, empiricism, in its best sense, such as occurs for instance in making a carefully balanced comparison between the effects of remedies upon a given disease and the results obtained by using other remedies, or by leaving the disease in question to take its own course, is not by any means opposed to reason or common sense, and has in many instances been productive of most fertile additions to our stock of organised knowledge. Indeed, in the infancy of science, before laws have been established, it is the only reasonable method of setting to work. All science takes its origin in empiricism; and between purely empirical facts, on the one hand, and facts having a definite scientific basis on the other, we meet with every degree of certitude.

The whole fabric of rational medicine rests upon a tripod, of which the one division is clinical observation and study of the

signs and symptoms of disease ; the second is the study of the seats and processes of disease, and the third is the study of remedies employed for the relief and cure of disease.

Of the three, clinical study is the natural antecedent of the other two, and is at the same time the most ancient, dating its origin from Hippocrates, 400 years before the Christian era. He it was who first prepared the way for the rational study of medicine, by separating the pursuits of the physician from those of the priest and the philosopher, with whom it had previously been inseparably identified. He overthrew the doctrines which referred diseases to the malign influence of angry gods, and struck the key-note of rational medicine by declaring that no one disease was more divine or human than another, and that none arose without a natural cause. From this starting-point he set himself seriously to observe the signs and symptoms of disease with surprising detail and precision, paying particular attention to their mode of evolution. He committed his observations to writing in a series of clinical histories, 42 of which have been preserved down to our own time ; and he summed up his conclusions in a series of aphorisms for the guidance and instruction of others, which constitute a veritable mine of insight and wisdom. As Dr. Francis Adams truly observes : "Hippocrates cultivated the art of medicine upon the strict principles of inductive philosophy more than 2,000 years before the world gave Lord Bacon the credit of introducing this method of philosophising."

Such doctrines as Hippocrates adopted in order to give cohesion and definiteness to his practice are often unsound and erroneous ; but he never strongly urged them upon others, and, beyond insisting upon the importance of waiting upon Nature and assisting her in the process of recovery, he nowhere seems to regard his doctrines as more than provisional hypotheses which would require to be re-cast from time to time as experience suggested. No more entrancing picture is to be found in the whole history of medicine than this calm and shrewd Nature-seeker (*Natur-förscher*, as the Germans call it,) laying

the foundations of rational clinical medicine amidst the din of philosophical controversy.

With one or two exceptions, this habit of recording clinical histories, now rightly regarded as one, of the most important parts of modern medical training, was practically forgotten until nearly 2,000 years later, when it was revived by our own Sydenham. But before I come to him, it is worth while just to give a glance at the events which followed the death of the great Asclepiad. The very intellectual strength of Hippocrates as a physician was a source of weakness in the promulgation of his teaching after he had passed away. The spirit of his methods was so far in advance of his age that it was difficult for anyone to follow exactly as he had led. But this is not all. Hippocrates knew no anatomy or physiology; his generalisations rested on no experimental or scientific basis; and therefore, wise as were his precepts, and excellent as was his practical common sense, his teaching lacked just that measure of rationalism which was necessary to ensure its persistence after his death. When the memory of the master grew dim in the minds of those who came after, and the direct influence of that remarkable personality was a thing of the past, his teaching became obscured by doctrinal mists, speculation with increasing frequency took the place of observation, and his followers forthwith began to split up into sects, many of which entirely threw off his authority.

Among these sects there are three to which just a brief allusion must be made, because they illustrate in a very striking way the especial liability of purely empirical medicine to degenerate, and also to some extent the direction which such degeneration is likely to take. The sects to which I refer are the Dogmatists, the Empirics, and the Methodists. The first were nearest to the Hippocratic model in the importance they attached to the discovery of the causes of disease. The aim indeed was excellent, but in the heat of their desire to establish causes at any price, they attempted to build where there was as yet no solid foundation, and to make up for what was wanting

in fact by the incontinent employment of their imagination. Are there no Dogmatists now-a-days? I think there are, and the hindrance which they oppose to the progress of scientific medicine is of a peculiarly dangerous kind, and especially difficult to meet because, owing to the increasing complexity of the problems to be solved, the nearer we get to the final causes of disease, and owing to the technicalities which surround their solution, their criticism is necessarily confined to the few, and the results obtained by accredited observers are apt to be taken too much upon trust, without being properly checked.

The Empirics repudiated all concern with the causes of diseases, and taught that they were to be judged by their symptoms alone, and thus reduced the whole of medicine to questions of treatment, occupying themselves with an endless search for specific remedies. They existed as a separate school for some centuries, and then split into two branches—the one philosophical, culminating in sceptic agnosticism; the other practical, culminating in an apotheosis of the wildest credulity. Empiricism of this kind is with us to-day, leading, as before, to scepticism and credulity. Nor is it surprising; for though much of it is probably due to ignorance or idleness, yet we must not ignore another cause, arising from the inevitable fact that the actual demands made upon us all in our daily work of ministering to the needs of the sick are always largely beyond the limits of precise knowledge; and it is not strange therefore, especially under conditions of grinding work and scanty remuneration, that some fall sadly short of the rationalist ideal, and finally emerge as sceptics or charlatans.

The Methodists strained after a pseudo-simplicity, by referring all disease to one or other of two groups, according as they were attended with constriction or relaxation of the “pores,” to which corresponded a dual system of treatment, on the principle of *contraria contrariis curantur*, namely by laxatives (bleeding, cupping, and leeches), and astringents (cold air and water, vinegar, and certain mineral substances), respectively. They disdained anatomy, regarded all diseases as general in their nature, and

deemed it quite unnecessary to learn their remote causes. This was simplicity at all costs; and it was the boast of one of their most eminent partisans—Thessalus, of Tralles—that he could teach the whole system to anyone in the course of six months. The Methodists also have their representatives to-day, in the school of Homœopathy—in so far as it is still practised conformably to the teaching of its founder. Homœopathic methodism, on the one hand, assumes to have brought the entire cure of disease under the operation of a single law—that like things are cured by like—a law which stands quite outside any considerations with regard to the causes of disease, claiming perfect simplicity and perfect safety; while on the other hand, it excludes, within the limits of its application, every possibility of failure, and condemns every system other than its own.

But to return, Sydenham, of sturdy English puritan stock, revived the Hippocratic method, in basing his practice almost exclusively upon clinical observation. “The improvement of physic,” he says, “depends upon collecting a generic and natural description or history of all diseases, so far as can be secured.” Again, “In writing the history of diseases, every philosophical hypothesis which has possessed the writer in its favour ought to be totally laid aside, and then the natural and manifest phenomena of diseases, however minute, ought to be noted with the utmost accuracy.” If he had confined himself to this his influence would possibly have been greater than it actually was; but, unfortunately, he greatly exaggerated the importance of searching for specific remedies, and his well-known doctrine of “epidemic constitution,” which he borrowed directly from Hippocrates, was distinctly harmful, by relieving the practitioner from all responsibility in troubling about investigation, in the presence of influences entirely beyond his control. On the whole, however, the influence of Sydenham’s teaching was bracing in the extreme, and was ably developed by Baglivi, in Padua, and Boerhaave, in Leyden. No praise is too high for the zeal with which Baglivi attacked the prevailing tendency to system-making, nor for the luminous simplicity and strong common-sense of dear old Boerhaave.

It is astonishing how history repeats itself. As with the teaching of Hippocrates of old, so with that of this glorious triumvirate, for which a similar fate awaited. It was unable to resist successfully those philosophic tendencies which formed so striking a feature of the eighteenth century. Attention was diverted from clinical observation and study by the animism of Stahl, the vitalism of Barthez, the organicism of Haller, and the methodism of John Brown, in succession. In spite of all this, the silver thread of clinical research was not utterly broken. Auenbrugger, a junior physician at the Vienna hospital, had published in 1661 a small pamphlet on "A new invention for discovering obscure thoracic disease by percussion of the chest," but its importance was never recognised until it was unearthed and brought into prominence by Corvisart, in 1808, which date marks the effective birth of the art of percussion. Eleven years later Laennec invented the stethoscope, and gave to the world his epoch-making treatise, "On mediate auscultation." By these new methods of investigating disease at the bedside, and the interest which they aroused, an enormous impetus was again given to the progress of clinical medicine—a result which has since been repeated over and over again by the discovery of fresh instruments of clinical research. By these means not only has the extent of clinical knowledge been greatly increased, but it has attained a degree of accuracy which probably never entered into the wildest dreams of the mighty clinicians of the seventeenth and eighteenth centuries.

The central and primary idea which underlies pathology as applied to practical medicine is essentially anatomical. *Ubi est morbus?* as Virchow so eloquently argued in his address to the International Congress at Rome, is the question with which every examination of a living patient must begin. To Morgagni (1761) belongs the honour, in his memorable work, "De Sedibus et Causis Morborum," of being the first anatomist to insist upon the fundamental importance of this question to the practitioner of medicine; and he himself went a long way to provide the means of giving a correct answer to it, thus laying the founda-

tion of morbid anatomy, and bringing it into closer association with practical medicine than it had ever been before. After his time the search for the true localisation of diseases was carried by Bichat from the organs to the tissues; and still later, by Virchow, from the tissues to the cellular elements of which they are built up; and to-day it would seem that morbid histology has almost been carried as far as the microscope can take us.

But it is not enough to be able to tell the seat of disease and its likely termination, important as these questions undoubtedly are. We have to recognise the fact that disease is a process, to find out as clearly as we may the nature of the process, and to work out as far as possible the chain of causation involved in the process. It is also obvious that a knowledge of perverted bodily processes must be preceded by a knowledge of the same processes in a state of health. Before Harvey's time, physiology can scarcely be said to have existed. His discovery of the circulation of the blood produced nothing short of a revolution in the attitude of medicine to the vital processes of the body; but, at the same time, his general conception of their nature was little if at all in advance of those who preceded him. The steps by which the modern position was arrived at are briefly these. Descartes, in the seventeenth century, was the first to regard all the properties of living matter as purely physical in their nature, looking upon the body as a mere machine actuated by some central source of power, like the mechanism of a watch. Then came Stahl, who ascribed all vital processes to the working of the soul. Next was Barthez, who attributed them to a central vital principle; and then Haller, who took an important step forward by recognising that the processes of the living body represented the processes of the living parts of which it was built up. This doctrine was still more clearly and definitely expounded by Bichat, who says: "All animals are assemblages of different organs, each of which performs its functions, and concurs, after its fashion, in the preservation of the whole." And again: "The conception of a proper vitality is applicable only to these simple tissues, and not to the organs themselves."

Thence to the modern view that individual cells are not only the anatomical but also the physiological units of which the living body is composed is only a short step, but at the same time one of pre-eminent importance. From this point pathology has advanced by leaps and bounds, concerning itself exclusively with the perversions and disturbances of cell-life which come within the sphere of physical and chemical investigation, and on which the phenomena of disease depend.

The latest addition to rational medicine consists in the systematic efforts which are now being made, and with considerable success, to ascertain the actual effects of remedies upon the body, with a view to our guidance in their selection, and in the application of them to the treatment of disease. The study of pharmacology is yet in its infancy, and the larger part of our practice is still purely empirical; but it has already profoundly influenced the attitude of the practitioner in the employment of remedies; it has modified his methods, and it has impressed even his empiricism with an intelligence which is both gratifying and encouraging.

This brief historical survey, meagre as it is, at least helps to bring out pretty clearly the steps by which medicine has come to occupy the position which it now holds as a rational art. If we would carry the same rational spirit into the conduct of our own daily work, it can only be on some such lines as these:— we must cultivate the art of accurately observing the signs and symptoms of disease at the bedside; we must acquire the habit of arranging our observations methodically, and in natural perspective; we must note especially the earliest manifestations of disturbance, and the order of its subsequent evolution; we must search out the circumstances and conditions under which diseases arise, seizing upon any likely causal connections between them and the disease which follows. At this point the anatomical question emerges—*Ubi est morbus?* To answer this, we have to draw upon our knowledge of morbid anatomy, and endeavour to connect the clinical manifestations of disease with lesions of a definite part or parts of the body, and to identify its

nature. The next step invokes a knowledge of the normal and morbid physiology of the affected parts, with a view of forming some coherent hypothesis of what is actually taking place in the process of disease before us, and trying to picture to our minds the actual nature of the functional perturbations, which give rise to the signs observed and the symptoms complained of; distinguishing as far as possible those which are primary and direct from those which are secondary and indirect.

Lastly comes the question of treatment; but where so large a portion of our practice is empirical, it is impossible to lay down universal principles for guidance. There are some general rules, however, to which I attach special importance. In the front rank I place the Hippocratic maxim, "to do good, or to do no harm." 2. The treatment of causes should take precedence of the treatment of symptoms; and with this end in view, the investigation of causes should be pushed back as far as possible. 3. In the treatment of symptoms, precedence should be given to those which most obviously hinder any natural tendency to recovery. 4. No active remedies should be used without a distinct conception as to the indication they are selected to meet, nor without some definite idea as to what is expected from their employment. 5. In dealing with serious emergencies, a remedy with which we are familiar should always be preferred to one of which we know little or nothing. 6. The importance of simplicity in the selection, prescription, and administration of remedies.

Such are the conditions which I respectfully submit, gentlemen, as those to which we ought to conform in order to live up to our reputation as members of a rational and scientific profession. I advance no pedantic claim to stand on any lofty platform of pure science, but I do attach the profoundest importance to stamping all that we undertake in our professional capacities with an unmistakeable impress of rational and honest common sense. A large part of our work—probably the larger part—consists, not in the solution of difficult clinical or pathological problems, but in helpfully adjusting the little physical

difficulties of the lives of others ; and I strenuously contend that the man who has carefully trained his powers of observation and reasoning in the higher branches of his work is by so much the better fitted to fulfil his humbler duties. In short, it is the *method* of rationalism which is the all-important fact ; and my belief is, that the more sedulously we cultivate the rational habit, the better we shall be able to interpret Nature in the interests of those who consult us, whether for small things or large.

The circumstances of our time are by no means uniformly favourable to the interests of rational medicine. There are two, especially, of which I should like to say a word or so. The first is over-work, by which I refer to an obligation to deal with a large number of cases in a space of time, which makes it impossible to go properly into each. Our hospital and dispensary out-patient departments afford striking illustrations of this. As a result of overcrowding, it is out of the question to give to every case the attention that it requires, and personally I entertain no doubt as to the demoralising influence which out-patient practice—conducted under these conditions—has upon those who engage in it. It accustoms the medical officer in charge to a superficial and haphazard way of practice, and familiarises the student with an example which is most pernicious. Fortunately in our medical schools, the worst results are to some extent obviated by the selection of a few suitable cases for special examination and study, and also by the example of the better methods pursued in the in-patient departments. Similar remarks apply to club-practice and parish-practice on a large scale ; and in a ten-fold degree to those abominations known as medical-aid-societies. Here however, there is not only the element of over-pressure, but that of under-pay. The rate of remuneration is so woefully low, that it is not in human nature to expect men practising under such conditions are able to do justice either to themselves, their patients, or their profession. It is easier to state the evil, than to find a remedy ; but nothing can be conceived which is more inimical to the interest of rational medicine, than the circumstances to which I have referred.

Another unfavourable influence arises from certain defects in the present system of medical education. So long as the curriculum is crowded with subjects, and with examinations in ever-increasing number, even the best students experience the greatest difficulty in obtaining a firm rational grasp of their work ; while the majority are greatly tempted to give up all honest work in despair, and trust implicitly to the "tips" of a crammer, and the indulgence of a beneficent Providence. When rational methods of thought and study are thus neglected from the outset, they are more often never afterwards acquired.

The remedies for this evil lie largely with the examining Boards. In the first place, there should be one uniform preliminary examination compulsory for all, which should be a real trustworthy test of a candidate's intellectual capacity, instead of requiring nothing more than a mere smattering of some half-dozen subjects. Speaking as a teacher of considerable experience, I do not complain of want of ability in the students who come under my notice, but rather of the lamentable absence in so many of them of any kind of exactness or method in their habits of thought and expression. Of course this is traceable to defects in the prevailing system of middle-class education ; and I believe, with Mr. Goschen, that the fault is due in large measure to the fact that our upper-class education has been framed in accordance with the wants of a section of society which has no need to work, and that this example which has been set in the highest educational plane, has made itself felt down to the lowest. But a great stir has begun in the educational world with reference to these questions ; and if it proceeds in sympathy with the genius of English wants and habits of life, and not in servile imitation of any continental system, a great change for the better may be anticipated in the near future, of which indeed there are already many indications.

Again, the knowledge that a student is required to possess of Chemistry, Physics, and Elementary Biology should be obtained, and the examinations in these subjects should be passed, before he is permitted to register ; while *Materia Medica* might be

altogether eliminated from the curriculum with positive advantage and relief, both to teachers and taught. It is also very doubtful whether, in view of the heavy demands made upon a student, if he works as he ought, systematic lectures on Medicine and Surgery are really necessary. I believe that the fees expended in this direction would be much more profitably employed in maintaining Professorships of Clinical Medicine and Surgery, to conduct frequent systematic demonstrations of disease at the Hospitals, in which the students should personally take part, and from whom written reports and commentaries of cases should be periodically received for correction. A plan of this kind would have the advantage of bringing the teacher and students into more intimate personal contact, the work done would be more attractive, with the further advantage of securing continuity both in the substance and style of teaching.

I remember reading an article in a medical journal some time ago (I forget where), in which the writer regarded the effort to place hospital-work on a scientific basis, as interfering with the acquisition of practical experience; and he went on to say that in the short duration of his curriculum it is possible for a student to acquire only a modicum of science, while he has the opportunity of an extended practical experience. I may be wrong, but I have always maintained exactly the opposite view. I have thought, especially because of the short time at their disposal, that students cannot expect to obtain a large experience, but that their object should be rather to lay up a store of useful general principles by the rational and scientific study of a small amount of carefully selected material, which will be the best possible foundation for the practical experience of the future to rest upon. And I hold that the noblest and highest ideal for us teachers is not to load our students with a mass of detailed information, however sound, nor with long strings of empirical maxims, however shrewd, but to do all we can to develop in them an intellectual capacity, and to inspire them with an intellectual interest, which will enable them to go through life teaching themselves. This, in my opinion, can only be done

by a vigorous endeavour to make our teaching above everything intelligent, suggestive, and rousing, and by trying to place all we do or say upon as rational and scientific a basis as the state of knowledge permits. At any rate, of this I am sure, that any man who has been fortunate enough to enjoy tuition at the hands of such a teacher, and who carries away from his alma mater a real love of his work and a good stock of rational general principles, will, in all probability, not only turn out a good practitioner, but will be equipped with that which will bring a perennial brightness into his life, for the absence of which nothing else will compensate.

I wish to lay especial stress upon the intellectual interest which belongs to and is an inherent feature of rational methods of work. There are other interests—the interests of success, ambition, profit, and duty, for instance—which, valuable as they may be and often are as incentives to undertake our work and to persevere in it, yet, after all, they are external to work, while intellectual interest takes its origin and grows in the work itself. External interests lead us to undertake work for what we can get out of it, while intellectual interest leads us to work for the sake of the work itself. A man who works exclusively from external interest, is apt to find it pall and grow flat as soon as the object which he has in view is attained, while true intellectual interest invariably grows and increases with what it feeds upon; and it is only when such interest is taken that any work really progresses and prospers.

There are many who care little or nothing for laws, principles, or general truths, whose boast it is that they are, above everything, practical men of affairs; and it is doubtless true that, with vigorous energy, good natural ability, and native shrewdness, such men often command great success, in the usual sense of the word. But, at best, they only serve themselves; their success dies with them; they have nothing which they can impart to others, and have done nothing to broaden the foundations of their work, or to lift it on to a higher plane. On the other hand, the man who works from intellectual

interest serves others as well as himself. All are the better for his work, and he leaves behind him general principles and truths which not only enrich the common stock of knowledge at the time, but give stability and guidance to all who come under their influence.

Do not mistake me, gentlemen. I do not pretend for one moment that the whole duty of medical life is summed up in rationalism, be it never so thorough. All the rationalism in the world, by itself, will not make a man a good doctor; but if he has in him the making of a doctor at all, rationalism will give life to his work; it will give him keen pleasure in his work, and will lift forward the work of others in the same calling as himself. Max Nordau tells us that in these latter days of the nineteenth century there is a degenerate and hysterical spirit abroad, taking its origin in the fact that progress has been too fast for human nature to adapt herself adequately to the increasing demands made upon her. I hope that, as a profession, we shall succeed in steering clear of this calamity; but it assuredly needs all the rational ballast we can carry now-a-days in order to keep us steady in presence of the feverish competition, hurry, and worry which characterise the life of the modern practitioner. In the haste to be rich, in the anxiety to keep a good place in public estimation, in the fervid desire to be up-to-date at any price, there are sore temptations at times to loose the moorings of rational common sense and to plunge wildly in the sea of irrational empiricism.

I have so far dwelt upon the subject of rationalism as it affects the purely professional side of our work; but, unless I am much mistaken, there is ample room for the wider application of rational methods to the commercial side of medical life and practice. On this, and other phases of my theme, I should like to have touched had time permitted, but I must not further prolong this address at the risk of exhausting your patience.

I have undertaken to show that modern medicine can claim a rational and scientific basis. I have indicated the more

important historical steps by which this result has been attained ; and I have pointed out one or two of the unfavourable influences with which rational medicine has still to contend. Fragmentary as my treatment of the subject has been, I trust it has afforded some idea of what rational study has done for medicine. It has immeasurably extended the range of our knowledge, it has revealed many new truths, and it has practically created preventive treatment of disease. But above all, it has made us free, it has emancipated us from the thralldom of dogma, and the chains of orthodoxy. Such, in brief, is the conquest of rationalism. This conquest does not belong to any one man, to any one country, to any one race, or to any one epoch. It is still in progress, and the full fruition of it has yet to be won, and will probably be long delayed.

Gentlemen, my pleasant task is over.

I can only show
A slender-margined, unilluminated page,
And trust its meaning to the flattering eye
That reads it in the gracious light of love.

THE INGLEBY LECTURES, 1895.

ON APPENDICITIS.

DELIVERED AT MASON COLLEGE.

BY GILBERT BARLING, M.B., F.R.C.S.

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LECTURE II.

HAVING said so much of the general features of appendicitis, I approach, what is in all diseases difficult, the classification of the cases into varieties. This difficulty, however, is one that must be faced, owing to the extreme variability in the severity and danger of appendicitis and the consequent variations in treatment required. Only in this way can something like agreement be arrived at between the physician and the surgeon. Many writers employ a pathological classification, and no doubt

this is the more scientific method. Unfortunately we are not yet able to associate a definite pathological condition with definite clinical signs. In many cases one can speak with a degree of certainty as to the condition of the vermiform appendix and its immediate surroundings, whether it be perforated or not, whether general infection of the peritoneum has been set up, whether pus is located round it or not; but very often this is impossible. For this reason I have adopted a classification which is mainly clinical, and which aims at associating those cases which have similar clinical features and which require similar treatment. Whatever the classification, fault may be found with it; but no confusion or drawback is likely to arise if it is borne in mind that there is a certain amount of overlapping—cases presenting themselves which are on the border-line of two groups, and it is doubtful to which they should be assigned. The classification I adopt is into four groups.

1. Mild appendicitis in which neither abscess formation nor perforation occurs. 2. Appendicitis with abscess formation. 3. Acute perforating appendicitis. 4. Relapsing appendicitis.

CLASS I. *Appendicitis without Abscess or Perforation.*—A majority of all the cases of appendicitis may be assigned to this class. In hospital they come mainly under the care of the physicians; they do not call for operative interference, and, under suitable treatment, they speedily tend to get well. What the condition of the appendix and adjacent parts is, is mainly a matter of inference. I believe it to consist in catarrh of the appendix, often with extension to the outer walls, and with a certain amount of adhesive peritonitis matting adjacent structures to the appendix and perhaps to the parietal peritoneum. After the full description I have given of the symptoms, it is unnecessary, when considering each variety, to recapitulate all the points. I propose only to dwell on the chief features of each group.

Class I is characterised by an onset of moderate intensity, the general abdominal pain is not severe, vomiting usually

occurs but once or twice, if at all; local tenderness in the right iliac fossa is moderate. The tumour, if one is palpable, is small, and when the patient is under treatment, soon begins to subside. Fever there almost always is in some degree—at the end of twenty-four hours it may be as much as 101° or 102° —but it soon diminishes, and in three or four days may be expected to be almost normal. The general aspect of the patient after the early colicky pain has subsided is satisfactory. In a typical case of this kind there is no further elevation of temperature, no return of acute pain, tenderness, or vomiting, and the local swelling will scarcely be found after a fortnight.

Treatment.—The general treatment about to be described is applicable not only to this class, but in a great degree to the earlier stages of the more formidable cases to be spoken of later on, and will not therefore need repetition. The first principle is absolute rest in bed in the horizontal position. The patient must not be allowed to get up for micturition or defæcation, nor should he sit up to take his nourishment or for similar purposes. Every case in its earliest stage, even though mild, should be regarded as potentially a severe one, and such I believe it is possible to make it by indiscretion. The diet should be fluids which are easily digested, and should be given at first in small quantities, especially if vomiting recurs after the onset. The bowels will generally be constipated, and will be best evacuated by an enema if any measure is required. Certainly purgatives should not be given by the mouth. When fæcal impaction in the cæcum was supposed to be the source of the mischief, it seemed reasonable to give purgatives with the object of dislodging the offending mass; but wider knowledge has shown that such impaction does not exist, and that the tumour we find is an effort on the part of Nature to circumscribe the mischief in the appendix by adhesion. If pus is forming or a concretion perforating—that is, if we have erred in regarding the case as a mild one—increased peristalsis dragging on and separating adhesions may induce a calamity. For these reasons, then, if evacuation of the bowel seems called for, it

should be induced by a simple enema, which does not set up widespread peristalsis.

Locally, I have tried both cold and heat for the relief of pain, and now give decided preference to warmth applied either by hot fomentations or, if they can be properly made, by means of linseed poultices. I should in this connection like to point out that it is not necessary to half flay the patient with turpentine and other applications, as is occasionally done. Leeches, up to as many as half a dozen, may often be used with advantage, and give speedy relief to the local pain and tenderness. When these symptoms are really severe, we must be careful that the relief given does not lead us into a fool's paradise. The local depletion, although a comfort to the patient, may not retard the spread of an infective inflammation, and such is of course often the cause of the severe local symptoms. Of the use of opium I desire to speak guardedly. I give it very sparingly in any acute abdominal conditions, from the dread I have of being misled by the relief it gives to the patient's pain. I have studied medicine long enough to remember when the administration of opium was part of the routine treatment of intestinal obstruction and such-like conditions. The relief from pain, the soothing of the patient, the disguising of the advance of the disease, all combined to mislead. The real state of affairs was so often grasped only when too late to allow of any real hope of success from operative measures. So it was, and sometimes still is, in the treatment of appendicitis. And yet it is unwise, and indeed hardly possible, to give up the use of opium entirely. When the patient is suffering severe pain at the onset, we may properly give a suitable dose of morphia for its relief. If, when the effect of this first dose passes off, pain in appendicitis seems to call for more sedative, we must reflect on the probable cause of the pain. It may be a gangrenous inflammation of the vermiform appendix, or a perforation, or commencing septic peritonitis; and what is called for is not opium, but operative interference. I do not wish to speak dogmatically as to how long the use of morphia may be continued in a case of appendi-

citis, but to point out that it is dangerous, because, by blunting the patient's sensibilities, it obscures the progress of the disease and may defer operation until it is too late to expect much good from it. The treatment of appendicitis in the first instance, then, should be by absolute rest in bed, careful feeding, the use of warmth, and perhaps of leeches locally, opium sparingly if at all, and by enemata if it is wished to empty the bowel. Under this treatment the majority of patients with appendicitis get well. If the early moderation of the symptoms is not followed by a later more intense development, this line of treatment should be persisted in, with such additions to the food as seem reasonable, until all local swelling and tenderness have disappeared. Allowing the patients to get up before complete resolution has occurred is a fertile source of relapse—relapse which may be more intense than the original attack. Nothing is more firmly impressed on my mind than the risk and trouble which patients suffer either because their own wilfulness, or want of discretion on the part of their medical advisers, permits them to get about too soon.

I said just now if the early moderation of the symptoms continues, the simple treatment described was all that would be required. It is the possibility of more urgent symptoms arising that makes the care of even quite mild and apparently simple cases an anxious responsibility in the first few days. I know of no disease which needs more careful watching—none in which we need to be more carefully on guard against an insidious or even fulminating advance of the symptoms.

CLASS 2. *Appendicitis with abscess formation.*—Most of the cases requiring operation in my experience belong to this class. The formation of pus is either the result of an interstitial appendicitis which has spread through the walls of the organ, and though an infective process, is still limited by well-defined adhesions, or is due to perforation of the appendix around which well-formed adhesions have been produced ere actual perforation occurs.

Speaking in general terms, the early symptoms of the attack

in cases where abscess may be expected to form, stand midway in severity between those of Class 1 just described and those of the acute perforating cases of Class 3. It is however necessary to add that occasionally pus formation occurs in cases when the onset is ill marked and the progress of the case is very insidious. This I believe specially to be the case when from the position of the appendix, adherent behind the large intestine or in one of the peritoneal pouches previously described, the abscess practically commences as an extra-peritoneal one. The extent of the abscess varies enormously, from a few drops of pus to pints. In Case 6 pus was diagnosed and found, yet the amount present could be measured by drops. In Case 1 from two to three pints were evacuated.

For the recognition of abscess formation I rely partly upon local signs and partly upon constitutional symptoms. Assuming that the patient has been confined to bed and treated on the general lines already laid down, the tumour and local tenderness should, if resolution is going to take place, in a few days begin to diminish. If this does not occur, and especially if the swelling increases, it is very suggestive of the formation of pus. Can we depend upon fluctuation, redness and œdema to tell us with certainty that we have an abscess to deal with? All these conditions *may* be present, but to wait for them to develop is in the majority of instances absolutely inexcusable and is running the patient into jeopardy. To detect fluctuation through the fat and muscular walls of the abdomen, infiltrated in the deeper layers perhaps by inflammatory tissue, may be impossible even though some ounces of pus may be present. A fallacy may exist too when fluctuation is apparent. This lies in the elastic walls of intestine containing a certain amount of gas, fixed by adhesion in front of the tumour and giving a feeling which is sometimes indistinguishable from true fluctuation. If fluctuation exists it is of course decisive, if it is absent this does not negate the presence of an abscess. Much the same may be said of redness and œdema of the skin. When present they are signs of great value, when absent they do not prove the absence of suppuration

and should not be waited for if other indications point to it. The local sign then of pus formation upon which I would lay stress is the increase in size of the tumour in the right iliac fossa when the patient is at rest in bed and under proper treatment.

The chief constitutional sign is the temperature. This has the feature which is characteristic of suppuration generally in other parts of the body, an elevation of two or three degrees or more in the evening with a morning remission to normal or nearly so. This hectic temperature may follow directly upon and be continuous with the primary elevation, or the fever of the onset may have subsided and the temperature have been normal for two or three days. I have relied upon this type of fever with extreme local tenderness for the diagnosis of pus in appendicitis when no tumour could be felt even under anaesthesia, and the evacuation of the abscess by operation has justified the diagnosis.

A rigor is significant if it occurs; but I have noted it as happening only occasionally—certainly it is not the rule. In one case which I saw in consultation but did not myself operate on, as many as a dozen rigors had occurred, but in this case pus had been present for some time, and had been allowed to remain and increase long after it should have been evacuated. To diagnose pus, then, the requirements are an increasing tumour, a hectic temperature, and persistent local tenderness. The diagnosis may be assisted by rigor, fluctuation, redness, œdema—all or any of which may be present, but not necessarily.

Treatment.—The general treatment, until the diagnosis of suppuration is made, will be as in Class 1. When pus has been diagnosed, it should, as early as possible, be removed. It is not necessary to delay operating until the abscess becomes a "safe" one—that is, so adherent to the abdominal wall as to be opened as easily and with as little risk as an abscess of the subcutaneous tissue. The objections to leaving the abscess until it is thus easily dealt with are mainly two. The first is the risk of rupture of the abscess into the peritoneal cavity, with resulting peritonitis. The reality of this danger cannot be too

strongly emphasised, and patients should be warned against violent and incautious movements of the trunk and lower extremities in all cases. The second objection to delay in operating is the destructive results which may be produced upon the tissues by the extending suppuration. In addition to coming forward in the right iliac region, it may be spreading to the pelvis, finding its way perhaps into the bladder, getting between the liver and diaphragm, and thence into the thorax. Most severe damage is done if the pus gets into the thigh beneath Poupart's ligament, or finding its way into the loin, thence escapes between the muscles in this situation, when it may track widely up and down in the loose planes of tissue. The destructive cellulitis which follows is dangerous to life, partly from septicæmia, but greatly also from the prolonged suppuration induced by the extensive tissue sloughing. Delay in operating for abscess arises from dread of finding what I generally speak of as the "non-adherent abscess." In this condition, the pus collection around the appendix pushing forward has not yet come in contact with the anterior parietal peritoneum, and before the abscess is reached by the surgeon, the general peritoneal cavity has to be opened. This of course implies the possibility of infecting the peritoneum as the matter is evacuated. Acknowledging this, I do not hesitate to say that danger from this accident may be so provided for that it ought not to weigh against the other more formidable ones incurred by delay. Before operation is commenced it should of course be noted whether the tumour be resonant or not. If it is, the resonance may be due either to intestine in front of the abscess or to gas in its cavity, due almost always to perforation of the appendix, though possibly merely to putrefactive changes.

No definite line of incision can be formulated for appendical abscess. Its direction should be somewhat oblique from above downwards and inwards over the most prominent part of the tumour where the abscess is most likely to be adherent to the anterior parietal peritoneum. Its length must depend a good deal upon the fatness of the abdominal wall, generally it is three

to four inches, and care should be taken not to get so low as to involve the deep epigastric artery. As the incision deepens, cedema and infiltration of the deeper tissues may be met with, so much as to make the different layers almost unrecognisable. In not a few cases pus wells out before the operator realises that the peritoneum is divided, owing to the alteration from inflammatory infiltration—that is, a “safe” or “comfortable” abscess has been opened. When the pus is evacuated the finger enters and searches for the appendix. It is often not recognisable, and even if it is will almost certainly be firmly tied down by adhesions and no attempt should be made to remove it. Stripping out of the appendix from the walls of the abscess is likely to break through the latter into the belly cavity and to lead to disaster. If the vermiform appendix is left, little anxiety need be felt as to future attacks of appendicitis, they rarely occur. Of all cases of abscess operated on by me at periods varying from two and a half years to three months ago, and which I have been able to trace, not one has had further trouble.

When the finger searches for the vermiform appendix it should also seek for faecal concretion or foreign body in the cavity. These should be carefully removed if detected, as otherwise they may be the cause of long-standing sinuses.

If the abscess is not of the “safe” kind the peritoneal cavity is opened and the wound should be enlarged to such an extent as to permit of careful examination of the tumour. Should resonance have been found this may be due to the cæcum or small intestine in front of the pus cavity. Search should be made to either side of the adherent bowel to see if the pus is presenting there or perhaps below the cæcum. In one of these situations the pus may be easily approached. If not, the intestinal and omental adhesions must be separated to get at it. Whether intestine is adherent in front of the abscess or not, certain precautions have to be taken to prevent fouling of the general peritoneal cavity with the pus. Where it is feasible I prefer to stitch the anterior parietal peritoneum with a ring of interrupted sutures to the covering of the abscess. When this

has been done, the pus may be evacuated through a small incision which later is enlarged to allow of the finger entering to explore for the appendix or for perforating bodies which should be dealt with as already stated. If protection by sutures is not available, then packing around by sponges and speedy mopping as the pus is evacuated will suffice, the cavity being packed with gauze when it is empty. During either of these manipulations the patient should be turned well on the right side so that if the escaping pus fouls the abdominal cavity it may not travel widely but remain localised. Above all things, the abscess should not be irrigated for fear of washing infective particles where they may set up general peritonitis. In all cases a drainage tube should be inserted to the bottom of the abscess cavity and gauze packed around in addition if the circumstances require it. It is generally wise to partly close the incision by sutures. In exceptional cases, when the pus runs upwards above the ilium, a counter opening should be made here and used to drain the cavity, or the abscess may be attacked entirely from the ilio-costal space without an anterior incision abdominal as in case 1.

CLASS 3. *Acute Perforating Appendicitis*.—Between this class and that just spoken of, the line of demarcation is not to be easily drawn. In many of the acute perforating cases there is a collection of inflammatory fluid more or less well defined by adhesion; but the fluid is thinner than ordinary pus, has more the characters of turbid serum, and the adhesions are slight, and offer a feeble barrier to the spread of the inflammation into a general peritonitis. It will readily be appreciated, therefore, that the more acute cases of abscess formation merge into the present group. Acute perforation implies either the presence of a faecal concretion or a foreign body which has ulcerated through the walls of the appendix, or an intense infective inflammation which, from stasis and thrombosis, has caused gangrene and sloughing of the appendix. The part played by catarrh in initiating both these conditions I have already alluded to at length. However perforation is brought about, what happens after will depend partly upon the position of the appendix and

partly upon the rapidity with which perforation occurs. If the appendix is lying free to the inner side of the cæcum, and if the perforation occurs very acutely, there will be rapid infection of the peritoneum, and a diffused septic peritonitis will speedily arise. If, on the contrary, the appendix lies to the outer side of or under the cæcum, or in a peritoneal pouch, or is adherent to surrounding structures from a previous attack, the inflammation will be localised for a time, and the imminence of general septic peritonitis is not so great.

The mortality from these acute perforative cases is very serious, and is much greater than from those conditions previously described. The recognition of this mortality has led to what one may call a "scare," out of which a clamour for operation in all cases has arisen from a section of the medical profession. The argument used is based on the acknowledged difficulty of always recognising an acute perforative case in time to operate ere general peritonitis is set up. It is suggested that the removal of the vermiform appendix in all cases, as soon as inflammation of it is recognised, would be almost devoid of risk, and the general mortality thus incurred would be less than that following selection of cases. Personally, I cannot assent to this view, seeing that a large number of patients—I believe the majority—get well without interference by operation; that generally it is possible to differentiate the more acute cases from those less so; and that the cases in which we are likely to be led astray occur mostly in children, upon whom we may properly therefore operate earlier and with less reserve than in older patients.

An acute perforative case generally begins with very severe diffuse abdominal pain, followed by or associated with extreme pain and tenderness in the right iliac fossa. Vomiting is almost certain to occur; and whereas in Classes 1 and 2 it may be expected only once or twice, or perhaps not at all, in this variety repeated vomiting is common, and is a symptom of great importance. The temperature will run up sharply three to five degrees; the pulse will quicken to 110, 120, or more; the

patient's face shows that he is very ill. It may be possible to detect the swollen vermiform appendix, but this will depend upon the will and the ability of the patient to relax his muscles. With a history such as I have recited, perforation may be expected to be imminent if it has not actually occurred. In the first twenty-four hours of the attack, whilst the diagnosis is being formulated, the patient should be kept rigidly in the horizontal position. Little nourishment should be administered by the mouth, and no attempt should be made to empty the bowel either by purgatives or enemata. If, at the end of that time, it is clear that the vermiform appendix is the starting-point of the mischief, the question of operation should be seriously considered, and arrangements should be made for carrying it out at any time. In children the fatality is so great from acute perforation, and its certain recognition in them so difficult, that I would advise operation, even at this early date, as involving the patient in less risk than delay. If the patient is older, some delay is allowable, provided always that he can be kept fully under observation. He must be seen every few hours, so that any advance of the symptoms may be recognised and acted upon. No disease requires such careful watching, if we are to intervene at a time when success is to be hoped for; that is, when the diagnosis of acute perforation, actual or potential, can be made, and general infection of the peritoneum has not yet set in. If after a further period of observation—it may be only of a few hours, it may be for a couple of days—the symptoms become aggravated, or if they do not abate, then further delay in operating is unwise and dangerous. The symptoms on which stress should be laid are persistent extreme tenderness over the vermiform appendix, vomiting which recurs despite careful feeding, elevation of temperature, quick pulse, and persistent abdominal face. The presence of these, or even of some of them, in my opinion calls for very early operation; and the call becomes more urgent if the belly is becoming generally rigid and tender, or if there is distension commencing at the right iliac fossa, or if a sudden increase of pain is felt in the same region.

With typical symptoms such as I have sketched the recognition of an acute perforative lesion is not difficult. When these are atypical and some of the characteristics are absent it is that difficulty arises. There may be no characteristic general colic, but pain from the first quite localised to the region of the cæcum. Or after general abdominal pain, pain and tenderness may be felt in both iliac regions or it may be chiefly in the left. Again, the patient may not vomit at all. The great point in recognising these cases is not to regard any one indication as essential to diagnosis. It is desirable to dwell not so much upon the *absence* of one particular feature as upon the *intensity* of those that are present. I would lay the utmost stress upon an unaccountably quick pulse or intense tenderness (unless it were evidently a very neurotic patient) in the right iliac fossa, or a bad facial expression. If a fall in the temperature seems to indicate improvement which is contradicted by remaining or increasing quickness of the pulse, it is the adverse symptom that should receive most attention (see case 14).

In any acute case, when from the rigidity of the abdominal muscles it is uncertain whether there is an inflammatory swelling in the right iliac fossa or not, chloroform should be given for a thorough investigation. In Case 16 the recognition under chloroform of ill-defined but distinct thickening determined the diagnosis and the site of operation. In Cases 18, 25, and 12, some uncertainty in diagnosis was also cleared up by the use of an anæsthetic. Of course, the patient being anæsthetised and the surgeon having discovered the local trouble, he will probably proceed forthwith to operate; he should certainly be prepared for this, or defer his examination until he is. Examination bi-manually with a finger in the rectum or vagina will tell more in some cases than mere abdominal palpation.

So far I have considered only the symptoms that may be expected before a diffuse peritonitis has arisen. I have already alluded to the difficulty which may exist in coming to a conclusion in some cases as to whether the inflammatory process is still localised to the right iliac fossa. If diffuse peritonitis exists,

in the later stages there is no room for doubt. The persistent vomiting, the generally distended and tender belly, the absence of vermicular movements in the intestine, the complete obstruction, the quickening pulse, the Hippocratic face, all point to the diffuse septic inflammation.

Operation having been determined upon, how is it to be carried out?

The position of the incision will be determined in the first instance by any tumour or thickening which can be felt. It is above all things important that the incision shall be as directly as possible on to any inflammatory collection, and that there shall be little disturbance of parts around it. This is the main secret of operating successfully on acute perforation without general peritonitis. The line of the incision should be somewhat oblique from above downwards and from without inwards; and after the division of the aponeurosis of the ext. oblique, most of the fibres of the deeper muscles can be separated without much cutting, so as to leave as little weakness as possible in the abdominal walls. It goes without saying that the general abdominal cavity is opened. The edges of the wound are now held open with retractors, and the finger carefully separates the coils of intestine to reach any thickening which may be recognised. This will probably set free a septic collection of thin pus or turbid serum, which must be carefully sponged up as fast as it escapes, the patient being at the same time well on to the right side, to direct the fluid away from the general belly cavity. After the collection has been thus removed, the appendix itself must be sought at the bottom of it. It will often be found quite free or partially encircled by a fold of omentum, and should be secured as near to the cæcum as can safely be done. It may be desirable to transfix the base of the appendical mesentery with an aneurism needle threaded with a double ligature, one half of which is tied round the base of the mesentery, the other round the appendix. If the appendix is not easily found, no extensive search should be made for it, or the whole purpose of the operation—the prevention of

septic infection of the peritoneum—will be defeated ; it is so easy for the exploring finger to carry infection where it did not previously exist. For the same reason irrigation should not be used, but the cavity occupied by the inflammatory collection should be carefully cleansed by sponging. Whether the vermiform appendix has been removed or not, the emptied cavity should be drained without exception. I generally use an india-rubber tube for the purpose, sometimes supplementing this with iodoform gauze packing. The packing I use only exceptionally, as there is sometimes trouble in removing it owing to the adhesion of the gauze to gut, etc., and the firm traction required may disturb the parts more than is consistent with safety. The upper portion of the wound should be closed with sutures, and the more effectively this is done, the less likelihood is there of subsequent hernia at the scar.

If general peritonitis exists at the time of operation, the course to be followed is somewhat different. I have seen success follow median incision and drainage only (see Cases 20 and 21); but notwithstanding this, if the patient's condition permits it, the perforated organ should be removed at the same time, otherwise the peritoneum is exposed to continuous infection. If both manipulations are not permissible, then median drainage should be preferred. When the appendix has been removed and the abdomen opened in the middle line, irrigation is called for ; but it should be done with care, so that if the highest part of the peritoneum is not involved, as I am sure is sometimes the case, it may not be contaminated by the surgeon's manipulations. Satisfactory irrigation is not easy. It must be done systematically, first in one region, then in another ; the hand must pass between the intestinal coils, allowing of the flushing out of the purulent pockets between them. Above all, the lumbar pouches and the pelvis must be thoroughly emptied. A drain should be placed in both incisions. A further proceeding has been advocated — viz, incision and emptying of the intestine, with subsequent suture, to relieve the paralysis from over-distension, and perhaps to

prevent faecal intoxication from the intestinal contents. I have not practised this for septic peritonitis following perforation of the appendix, though I have for other conditions. It may be justifiable under certain circumstances. These are that the intestine is much distended and that the further time thus occupied on the operating table does not immediately jeopardise the patient.

During the progress of the case, after a period of well-doing, the patient may begin to lose ground. The quick pulse returns; the temperature again rises; there is sweating, and an ill-looking face. The abdomen should be carefully examined for some collection which is not draining. This may be found in the pelvis or either loin, but the commonest region is by the ascending colon, where it may track up as high as the liver. I have seen an extensive collection between this organ and the diaphragm, although the rest of the belly cavity was doing well. Any collection such as I have indicated should at once be drained by direct incision.

CLASS 4. *Relapsing Appendicitis*.—A certain number of patients, after apparent recovery from appendicitis, become the subjects of future attacks, of varying severity and at variable intervals of time. The appendix and the tissues around it do not return after the first attack to a normal condition. One of several altered states may be found. The appendix, bent upon itself and fixed by adhesion, is so kinked in its calibre that secretion and it may be pus is retained in its distal portion. Or, from the previous inflammation, complete obliteration of the lumen has taken place at some point, and beyond this, retention of mucus or pus occurs until the organ may be distended to the size of the finger. Or around the distorted and adherent appendix a few drops of pus may be found secured by firm adhesion, or one or more concretions or foreign bodies may lie in its canal.

One of these conditions existing, renewed activity of the patient lights up a fresh inflammation. It is not necessary to describe the attacks in detail; they are like other attacks of

appendicitis — extremely variable in intensity and duration. After three or four the patient may recover, or abscess formation may occur, or, from breaking down of adhesions, a perforation of the appendix or rupture of an abscess may give rise to diffuse septic peritonitis. Relapsing appendicitis is tedious from the chronic invalidism it produces, which interferes with the patient's comfort and his pursuit of business or pleasure. It may be dangerous to life from one of the acute manifestations just mentioned, a mild attack on the first and subsequent two or three occasions being no guarantee that those following will be of the same moderate intensity.

Treatment.—It is sometimes forgotten that the first and most important treatment of relapse is *rest*. Neglect of this in the first instance is, I am convinced, the cause of many relapses. With rest—it may be of many weeks' duration—general treatment should be combined. The diet should be restricted to such things as leave little solid residue in the colon, vegetables and fruits being almost excluded. The bowels should be emptied every day, either by a saline purge or by enema; locally, one or more blisters should be applied, and the patient should be prohibited from getting out of bed for any purpose. By pursuing this plan of treatment, I have had patients get well after several relapses. If such treatment fails to cure, or if the patient declines to adopt it because his medical adviser cannot guarantee that rest, etc., will restore him to health, then removal of the appendix is called for. As to whether it should be done in a period of quiescence between two attacks, or when signs of a recent outbreak of inflammation exist, is a somewhat disputed point. Personally, I would advise a period of quiescence to operate in, with the proviso that some thickening or induration could still be felt at the site of the appendix. Otherwise I would wait for an acute development.

Operation having been determined upon, the operator is able to leisurely make his arrangements and select his own time. As to the position of the incision, here again we must be guided mainly by the position of any thickening which can be felt;

the great point is to approach this as directly as possible. If the option is allowed by circumstances it is better to incise somewhat to the outer side of the line semilunaris in an almost vertical line through the skin and ext. oblique, the deeper muscles can be separated with but little division of their fibres, then the transversalis fascia and peritoneum, the edges of the wound being retracted so as to make a transverse rather than a vertical wound. The first step now is to identify the base of the appendix, and the guide to this is one of the longitudinal bands of muscle on the cæcum; for choice the anterior, which, being persistently followed to its termination, must lead to the appendix into which it enters. Adhesions of the utmost toughness, between appendix, intestine, and omentum may have to be separated, and this must be done often with considerable force and yet at the same time with reasonable care, as the bowel may be easily torn. At this stage the use of a flat broad-ended director is often of considerable service. This recognition and stripping out of the appendix may be a task of the utmost difficulty, and in one of my cases, No. 28, I stripped out the middle and inner coats, leaving the peritoneal coat still adherent, but the result was perfectly satisfactory. The appendix having been separated, it should be removed as close as is safe to the cæcum, and the end may be closed over with one or two sutures, a precaution I do not take in all cases. Whether the abdomen should be drained or not will depend upon the amount of handling and whether any small abscess has been found. If the manipulations have been extensive, or if pus has been liberated, I prefer to err on the safe side and drain.

If the relapses eventually end in abscess, this should be dealt with on the lines previously laid down. In one case of this kind which came under my care, after abscess had formed and been operated on, the appendix being left, the patient had another relapse. Prolonged rest however appears to have eventually produced cure, as the patient has now remained well for more than a year. If relapse ends in general peritonitis from perforation or ruptured abscess, operation will be required on the lines already laid down.

When a patient has been the subject of appendicitis of any severity, what is his expectation of further health and length of life? Clearly both are somewhat depreciated. Apart from relapses, the patient is often the subject of dyspepsia, flatulence, and constipation, no doubt the result of adhesion interfering with the movements of his intestines. That such adhesion exists with frequency is shown by the experience of operations and by that obtained in the *post mortem* room. After general peritonitis, adhesions may cause complete or incomplete obstruction, as in Case No. 22, and so actually threaten life.

A note of all my operations is appended. They are twenty-nine in number, and of these twenty-three were followed by recovery and six by death. In all the patients who died, general peritonitis existed at the time of operation, and was demonstrated by the symptoms as well as by the conditions found. I do not think, therefore, that the surgical procedure can in any case be regarded as causing the fatality. My only regret, as far as my own judgment is concerned in the management of these cases, is that I allowed any delay in the second operation performed in Case 22. Excepting this one, the fatal cases were obviously *too late* cases. The proportion of recoveries I have to show—two out of eight operations for general peritonitis—is, I think, quite as high as, if not above, the average. Without imputing blame to anyone, I want to emphasise the importance of catching these cases ere general peritonitis is started. For this the frequency of appendicitis, especially in children and young adults, must be ever present in our minds. The right iliac fossa must be one of the points for particular investigation in those cases of vague colic and pain, with sickness, elevated pulse and temperature, when there is no spontaneous indication of the cæcal region by the patient as the seat of his trouble.

CASES,

Case 1. *Perforation of appendix, extensive abscess formation, running up behind cæcum, through the Costo-Iliac space and downwards over buttock; drainage; recovery.*—M. T., f., age 36, was

admitted to the general Hospital, October 16th, 1894. A few weeks before she had pain for three days in the region of the cæcum, she was constipated and lost appetite. She considered herself well after this until Oct. 7th, when she had a similar attack of pain which had continued ever since.

On admission a swelling could be palpated in the right iliac fossa, running upwards in the line of the colon. There was also a fluctuating swelling occupying the lumbar space posteriorly, and extending downwards over the ilium to the lower part of the buttock. Over the whole of this area behind, the skin was red, cedematous and tender. The gluteal swelling was *resonant*, but that in the loin and iliac fossa was dull. The patient lay with her right leg much flexed, her temperature was 102.

Operation.—Free incisions were made in the loin and buttock, the finger passed behind the cæcum, but the appendix could not be felt, there was a patch of bare bone on the crest of the ilium. A very large quantity of foetid pus was liberated, from two to three pints, and from the gluteal swelling a quantity of free gas. Rapid improvement followed the drainage and in the third week a large and extremely hard concretion was found in the drainage tube, which had been placed behind the cæcum.

Present Condition.—There is still a small sinus leading to the bare patch on the iliac crest, but otherwise the patient is well.

Case 2. *Sub-acute abscess; drainage; appendix not removed; recovery.*—A. J., f., age 14, transferred from Dr. Simon's wards August 2nd, 1893. Incision directly on to abscess cavity, six oz. pus removed, drained, appendix not felt, discharged cured.

Present condition unknown, as patient could not be traced.

Case 3: *Slowly forming safe Abscess; drainage; appendix not removed. Recovery.*—J. W., m., age 29, transferred from Dr. Simon's wards, July 20th, 1893. The patient had suffered from typhoid fever five years before. His present illness began about a month ago with pain in the abdomen and tenderness in the right iliac fossa. At the time of operation there was a well-defined tumour to be felt on the outer side of that region, but fluctuation could not be made out. T. 102, P. 102.

Operation.—Incision let out several ounces of foetid pus to the outer side of the cæcum. The general cavity was not opened. The patient was discharged at the end of five weeks.

Present condition not known as patient could not be traced, but he was well some months after operation.

Case 3. *Slowly forming safe Abscess; drainage; appendix not removed. Recovery*—M. A. G., f., age 26. Admitted to the General Hospital under the care of Dr. Simon, Dec. 14, 1891. Her illness had commenced some seven weeks before with severe pain in the right side and soon after a rigor. When admitted, there was a considerable tumour in the right iliac fossa, moderately tender, but presenting neither redness, œdema, nor fluctuation. The temperature rose in the evenings from 101 to 103, and most mornings fell to about 99. Operation ten days after admission, the tumour having then increased until it extended near to the lumbar region. Under the anæsthetic, doubtful fluctuation only. Incision showed dense infiltration of the abdominal wall, many ounces of foetid pus were evacuated, and a counter opening for drainage was made above the crest of the ilium, but the appendix was not removed. The temperature immediately fell to normal and remained so, and the patient made a good recovery.

Present condition not known, but patient was well a year after operation.

Case 5. *Chronic Perforative Appendicitis; abscess; drainage; slow recovery.*—P. H. J., aged 20, admitted February 19th, 1895. Patient has had pain in the right iliac fossa for the past twelve months, and exercise of any amount induced a swelling there, which subsided with rest, and then re-appeared. During this time she suffered from constipation. On admission, there was a hard, tender, and obscurely fluctuating swelling above the right Poupart's ligament.

February 21st this was incised, and some ounces of foetid pus and foul gas were evacuated. The finger passed up behind the cæcum, but neither appendix nor concretion could be felt.

March 27th a little fæcal matter appeared in the dressing.

Present Condition.—A sinus still exists.

Case 6. *Perforation of Appendix with very small Abscess ; — removal of appendix ; cure.*—C. B., male, aged 29, was first seen by me on September 11th, 1894, with Dr. Frost. It was difficult to get an exact history, as the patient—who at one time was the inmate of an asylum—was very reticent and mentally feeble. On occasions he would go for long walks, being absent the whole day, taking no food with him, and eating berries or corn in the fields. His illness appears to have commenced, four days before I saw him, with pain in the abdomen and vomiting, and a temperature of 102. During the next three days the temperature was raised from two to three degrees ; the patient complained of stiffness in the right iliac region, and he was constipated. There was rather an ill-defined lump in the upper part of the right iliac fossa, three to four inches in length, and hugging rather closely the crest of the ilium ; it was only slightly tender, was somewhat dull on percussion, and no fluctuation could be felt. As the conditions at home were not suitable for operation, the patient was transferred to hospital. On one or two days the temperature was elevated to 101 or 102, and then for a week became almost normal. Then for four successive evenings it ran up to from 101 to 102, with a recurring remission to 99 ; and though the swelling had not increased and there were no other untoward symptoms, pus being diagnosed, operation was determined on.

Operation, Sept. 25th.—Incision over the swelling opened the abdominal cavity. The appendix was found to the outer side of the cæcum, with a few drops of pus, and a small quantity of breaking-down granulating tissue around it. The appendix was removed, and the cavity drained. On examining the appendix, it was found to be completely stenosed at the junction of the middle and distal thirds, and at its extreme end was a small perforation, but no hard body could be discovered to account for this. The drain was removed on the fifth day, and speedy recovery followed.

Present Condition.—The patient is now in good health and without any local trouble.

Case 7.—*Sub-acute appendical abscess, opening into the Urinary Bladder; drainage; appendix not removed. Recovery.*—H. T., f, aged 12, was transferred to my care from Dr. Saundby's wards in the General Hospital, on August 4th, 1894. Her illness had commenced at the end of May with pain in the abdomen and vomiting, which lasted for 24 hours and then ceased, though pain was at times troublesome and the patient was constipated.

The abdomen, in the early part of June, was rather full, but no definite localised swelling could be made out until June 10th, when a small lump could be felt $1\frac{1}{2}$ in. internal to and below the right anterior superior spine. On July 4th this had increased in size and on that night the patient vomited several times. July 16th for the first time the urine contained pus. From this time until the day of operation the history was one of occasional vomiting and of varying quantities of pus in the urine, but during the whole history there was no record of temperature such as is often indicative of suppuration. The patient was very wasted and looked ill; operation Aug. 4th. Examination with the cystoscope failed to detect the point where the abscess opened into the bladder. An incision was made in the middle line of the abdomen, over the inner edge of a swelling extending from the right iliac fossa. On opening the abdomen a fluctuating collection was found to the right of the bladder. After circumscribing this by stitching its surface to the edges of the parietal peritoneum several ounces of foetid pus were evacuated and a drain inserted. No attempt was made to remove the appendix. For the next few days the amount of pus in the urine was much diminished and at this time I left for my holiday. On my return I found the patient much as before the operation, and in this respect worse—that there was a considerable rise of temperature in the evenings. The amount of pus in the urine was as considerable as before, and it appeared probable that failure was due to the drainage tube not having been replaced in the abscess cavity after it had been removed.

for cleaning. Second operation Sept. 29th, an incision was made a little to the right of the former one, the conditions found were as before and the same line of treatment was followed, about 3 ozs. of pus being evacuated. The appendix was not removed and the cavity was drained. From this time the patient steadily improved, quickly putting on flesh. The urine contained less and less pus until by the middle of November it had disappeared.

Present Condition.—There is nothing to be felt at the site of the abscess, the patient is free from pain and looks in robust health. At the site of the second operation there is a tendency to hernia.

Case 8. *Acute Abscess from perforated Appendix, abscess non-adherent. Drainage; Appendix not removed. Recovery.*—R. I., m., aged 16. On Feb. 20th, 1894, the patient suffered severe abdominal pain and vomited three times. The next two or three days he was constipated, and then had diarrhœa. On Feb. 27th there was a return of severe general abdominal pain, and the patient was admitted to the General Hospital. His temperature was then 101·2, Pulse 92. A swelling existed in the right iliac fossa reaching from an inch and a half inside the anterior superior spine to within two inches of the umbilicus. It was resonant all over, but deep fluctuation could be felt. Nothing could be detected per rectum.

— *Operation* Feb. 28th.—Incision over the most prominent part of the swelling opened the general abdominal cavity. The cæcum lay immediately under this and was pushed towards the middle line, revealing a collection of pus behind and to its outer side. About six ounces of matter and some free gas were evacuated and a loose hard fæcal concretion. The perforated appendix could be felt firmly adherent to the back of the cæcum, and it seemed unwise to strip it out. The cavity was drained and an uneventful recovery followed.

Present Condition.—He is perfectly well and no local thickening can be felt. There is a slight hernia at the scar.

Case 9. *Acute Interstitial Appendicitis with small collection of pus. Removal of Appendix. Recovery.*—E. J., f., aged 32, first seen by me on January 19th, 1894, with Dr. Motteram. The patient was then suffering from intense abdominal pain and nausea. Her face was anxious in expression; she was sweating profusely. T. 101, P. 120. The abdomen was distended, forcible peristaltic movements of the intestine could be seen and felt; no tumour could be palpated; the patient had vomited once that evening. She gave a history of acute general abdominal pain on January 14th, with pain subsequently localised to the right iliac fossa and extending down the right thigh. On the day of the seizure she vomited three times. She was transferred to the General Hospital and operated upon the same night. When anæsthetised, a distinct thickening could be felt in the region of the cæcum. Incision showed a good deal of matting of small intestine to the cæcum. When this had been unravelled the appendix was found beneath the lower end of the cæcum, and around were a few drops of pus. The appendix was removed; it was inflamed and thickened, but was patent throughout and showed neither concretion nor ulceration. A drain was inserted and the patient made an uninterrupted recovery.

Present Condition.—She is perfectly well now.

Case 10. *Sub-acute non-adherent Abscess; probably perforated Appendix. Drainage; recovery.*—W. F., m., age 38, was admitted under my care to the General Hospital, March 27th, 1892, with a history of fifteen days' illness. This commenced with pain in the back and then acute pain in the abdomen. With a few days rest in bed his symptoms improved and he got up, but soon had a return of the abdominal pain, but he did not vomit either now, or in the first instance. When I first saw him, at his residence with Dr. Orton, his temperature was 102, pulse 100. The lower half of the abdomen, but specially the right side, was tender and somewhat distended and tense. No tumour could be felt, but it was impossible to palpate deeply owing to the muscular rigidity. The tongue was dry and brown,

patient looked ill. He complained chiefly of pain during and after micturition. March 28th, temperature 100·5, pulse 98. No sickness, right iliac fossa acutely tender, no redness or œdema. Abdomen rather more full on the right side. Patient looked very ill. The urine contained one-tenth of albumen. An anæsthetic was given to examine the abdomen when it was at once recognised that there was a tumour in the right iliac fossa, but fluctuation was not attained. Incision opened the abdominal cavity, and on separating the cæcum from the adherent intestine on its inner side, about four ounces of pus was evacuated. No search was made for the appendix, the cavity was carefully mopped out and drained. A good recovery followed. The albuminuria disappeared.

Present Condition.—He is perfectly well with the exception of a hernia through the scar.

Case 11. *Perforation of Appendix; non-adherent abscess; phlebitis left femoral vein; pleurisy right base; drainage; appendix not removed; recovery.*—A. E. J., aged 20, was seen by me in consultation with Dr. Wilkes on January 12th, 1894. For two or three weeks previously she had suffered from pain in the right iliac fossa, and a swelling was found there. During this time there was occasional vomiting and some fever. She was kept at rest in bed until January 7th, when she was allowed up, as the swelling could not then be felt. On January 9th there was pain and swelling of the left leg, and temperature 101. When seen by me there was a fluctuating swelling two inches from the right anterior superior spine. This was resonant in front, the skin was neither red nor œdematous, tenderness was slight. The left leg was swollen up to the middle of the thigh, the superficial veins were distended, the popliteal and femoral veins could be felt to be thrombosed. There was dulness and friction over the base of the right lung. Temperature 102.

Operation, Jan. 13th.—The peritoneal cavity was opened, and an abscess found behind and to the outer side of the cæcum. The latter was displaced inwards, and about four ounces of foul pus evacuated; a hard faecal concretion was also

removed. No search was made for the appendix; the cavity was drained. A steady convalescence followed, but for several weeks a sinus remained. Eventually another fæcal calculus was removed, and the sinus then closed.

Present condition.—The patient remains well, except that the left leg still swells somewhat.

Case 12. *Acute Interstitial Appendicitis; Peritonitis; removal of appendix; recovery.*—M. A. M., f, aged 36, was admitted to the General Hospital under my care on Nov. 23rd, 1894. She had suffered from a miscarriage nine weeks before, and her last period was a week ago. On Nov. 21st she was at work all day, and at 8 p.m. was seized with severe general abdominal pain and vomited once. The pain continued until the 23rd, and vomiting occurred once more. The bowels were constipated for more than a week until Nov. 22nd, when there was a slight action. Flatus had been passed on the day of admission.

Nov. 23rd. On admission the abdomen was generally moderately distended. Tenderness was diffused over the lower half and was as marked in the left as in the right iliac fossa, perhaps even more so. The patient looked pinched and ill. P. 120, T. 101.5. No thickening or tumour could be felt anywhere. Diagnosis being uncertain an anæsthetic was administered to allow of more complete examination soon after admission. A distinct thickening was then felt between one hand in the right iliac fossa and the other examining per vaginam. The abdomen was therefore at once opened to the right of the semi-lunar line and some turbid serum escaped. The portions of intestine seen were flecked with patches of lymph. The appendix was removed from the outer side of the cæcum which was displaced inwards. The appendix was moderately swollen and covered with dense layers of lymph, but it was not otherwise altered. A good recovery followed.

Present condition.—The patient is now well.

Case 13. *Sub-acute Appendicitis; localised purulent peritonitis; drainage; recovery.*—M. K., f., aged 17, admitted to the

General Hospital March 18th, 1895. Two months before, patient suffered an attack of general abdominal pain, and vomited once. A day later she appeared to be well. A fortnight before admission she had a similar attack, but the pain being continuous, she kept her bed for a week. She then got up each day, but was not able to work, and on March 17th she had another attack of pain. The bowels had acted at irregular intervals.

On admission, a massive induration was found in the right iliac fossa, reaching beyond the middle line of the abdomen. This could be felt per vaginam, but much more distinctly from the rectum, which it appeared to surround. From the rectum there was a muco-purulent discharge, as though from a proctitis. Temperature 101. Operation the same day by an incision near the right semilunar line. Some ounces of foetid pus were let out, mainly from the pelvis. The collection was very ill-defined, and the appendix appeared to be densely adherent between the cæcum and ileum. It was therefore deemed safer to leave it alone, and the collection was merely drained. The patient made an excellent recovery.

Present condition.—The patient is now well, but slight thickening can be felt through the front of the rectum; this, however, is steadily lessening.

Case 14. *Acute Perforative Appendicitis; ? general peritonitis; drainage; appendix not removed; recovery.*—M. A. A., f., aged 39, very stout, was transferred to my care on December 30th, 1894, having been admitted to the General Hospital the previous day under the care of Dr. Saundby. The patient was in good health until December 27th, when, out walking, she was seized with sharp pain in the right iliac fossa, nausea, and urgent desire to micturate. The bowels had been open on that day.

On December 28th she suffered from general abdominal pain. The bowels acted after a pill.

December 29th. The pain in the abdomen was very severe, and the abdomen was said to have been so swollen that the

patient could not fasten her clothing. She was retching, but not vomiting. On admission (Dec. 29th), there was general abdominal pain and tenderness, the latter most marked in the right iliac fossa, where there was much rigidity and some dulness. The bowels had acted that day. Pulse 114, respiration 36, temperature 104.

December 30th. Patient has vomited frequently in the night and to-day. The pain is better, but the tenderness, especially that over the appendical region, is very marked; the abdomen is generally distended, but no tumour can be felt. She looks very ill. Pulse 132, respiration 42, temperature 99.

Operation, December 30th.—Incision just outside semilunar line. Ill-defined collection of foetid semi-purulent fluid found between the intestines; several ounces evacuated; appendix not readily found, and no considerable search made for it. Cavity sponged out and drained. Tubes removed January 9th, 1895. A good recovery followed.

Present condition.—Patient is in good health, and no bowel thickening can be felt.

Case 15. *Gangrenous Appendicitis; removal of appendix; drainage; recovery.*—W. A., m., aged 26, was admitted to the General Hospital on March 19th, 1894, and operated upon at once. For some days previous to March 16th the patient had felt uncomfortable in his abdomen as though he had indigestion. On that day he had very severe general abdominal pain and vomited several times, but the vomiting ceased when he refrained from food. On March 17th he got up and had a return of severe pain which was now localised to the right iliac fossa. On March 19th he was seen by Dr. Middleton who at once recognised the gravity of the patient's condition and sent him to the Hospital.

On admission he looked very ill, his face was pinched and his eyes sunken. P. 120, T. 101. The abdomen was very distended, fixed and rigid; no swelling could be palpated in the right iliac fossa, but the general tenderness of the abdomen reached its acme here. Even under anæsthesia nothing of the nature of a tumour could be palpated.

Operation.—Incision to the outer side of the right semi-lunar line let out several ounces of foetid thin pus which one could hardly speak of as defined by adhesions at all. The appendix lay in this, gangrenous at its distal part and breaking down, but there was no sign of concretion. The appendix was removed and the incision drained. A good recovery followed.

Present Condition.—Patient remains well.

Case 16. *Acute Perforating Appendicitis ; drainage ; appendix not removed ; recovery.*—M. A., f., aged 60, was first seen by me in consultation with Dr. Ratcliffe April 27th, 1894. She was in good health, except for constipation, on April 25th, when she took two aperient pills. In the afternoon of the next day she suffered extreme pain all over the abdomen, but especially in the right iliac fossa, where there was extreme tenderness; she vomited repeatedly; the bowels acted once on the night of the 26th

April 27th. There was severe general abdominal pain and tenderness, specially marked over the cæcal region; the abdomen was generally distended; vomiting was very frequent; no flatus or fæces passed during the day. Per rectum and per vaginam no tumour could be palpated, nor could anything be felt through the rigid abdominal wall. Pulse 130, temperature 99·6.

Operation, 10 p.m.—Under anæsthesia, increased resistance and fulness could be felt at the lower part of the abdomen inside the right semilunar line. Incision directly on to this, let out two or three ounces of foetid pus which lay between the intestines, not bounded by any definite adhesions. The vermiform appendix was not easily found, and no considerable search was made for it. A drain was inserted.

On May 3rd a broken-up fæcal concretion was found in the dressing. A steady recovery followed.

Present condition.—Patient remains well. There is no hernia.

Case 17.—*Acute Appendicitis, probably perforation ; Peritonitis of lower part of abdomen ; median drainage ; recovery.*—M. L., m., aged 7, seen in consultation with Dr. Thorne, of Leamington,

April 1st, 1894. On March 12th when from home he was feverish and poorly. On the 18th he complained of pain in the abdomen and took a dose of licorice powder. The following day the bowels acted several times, the patient was sick once and complained of pain in the abdomen. This pain continued for the next four days, but was not severe as opium was given to relieve it. On the 21st there was a rigor and the temperature rose to 105. On the 28th pain after micturition was complained of, as it was several times after, and on the 30th the temperature rose to 104.2 and vomiting occurred twice.

When seen by me on April 1st the patient, a delicate looking boy, lay on his back with his legs flexed, his face was worn and anxious; the abdomen was distended, tender, rigid, and tympanitic everywhere except in the region of the bladder where it was dull; this dulness was not altered by emptying the bladder. Attacks of pain came on with violent peristaltic movements which could be seen through the abdominal walls. T. 101.6, P. 120, R. quick, the alæ nasi working. No defined tumour palpated. Under anæsthesia a definite swelling was felt between the right iliac fossa and the middle line of the abdomen.

Operation.—The abdomen was opened in the middle line and several ounces of foetid pus let out. No search was made for the appendix; the abdomen was drained. A steady recovery followed.

When seen on October 29th the boy was well except for occasional "stomach ache." There was some tenderness on deep pressure in the right iliac fossa.

Present condition.—Patient is now quite well and free from any local trouble.

Case 18. *Acute perforative Appendicitis; general Peritonitis; drainage of collection around Appendix. Death.*—A. J., m., aged 6 was transferred to my care from the medical wards, Aug. 8, 1894. He lay in bed with a distended and acutely tender abdomen, vomiting frequently, very restless and constantly crying out. His extremities were blue, his expression hippocratic. Nothing could be made out by examination as to

any localised condition in the abdomen, and the friends were practically unable to give any account of the illness.

Operation.—Examination under anæsthesia revealed ill-defined fulness in the right iliac fossa and incision directly on to this let out some ounces of foetid sero-purulent material. The appendix was not readily found, and though it seemed pretty certain that it was perforated, and that general septic peritonitis existed, the collapsed condition of the patient forbade anything further being done, and the fossa was simply drained. He died the next day.

Post-mortem.—There was general purulent peritonitis. The appendix was swollen and inflamed, and pointed downwards and inwards, its free end hanging down into the pelvis. About half-an-inch from this a small perforation existed.

Case 19. *Acute Perforative Appendicitis ; general peritonitis ; removal of appendix ; irrigation of abdominal cavity ; drainage ; death.*—I. C. D., m., aged 14, admitted to the General Hospital February 17th, 1894. He had an acute attack of abdominal pain on February 14th. The next day the pain returned, the abdomen became distended and generally tender.

On admission, T. 103, thoracic breathing, abdomen distended and tender, vomiting, delirium, dulness in the right iliac fossa, but no tumour palpable. Bowels constipated.

Operation.—Under anæsthesia, distinct thickening and fulness felt in the region of the cæcum. Incision over this, showed general peritonitis. The appendix was ulcerated through three-quarters of an inch from its far end, and near this a fæcal concretion was found lying between the intestines. The appendix was removed, the abdomen opened in the middle line and thoroughly irrigated. Both incisions were drained. The patient died the next day.

Post mortem showed general purulent peritonitis, with a considerable collection of pus between the liver and diaphragm. There was pneumonia in both lungs.

Case 20. *Acute Appendicitis ; general Peritonitis ; median drainage ; appendix not removed ; Recovery.*—H. N., m., age 20. Seen in consultation with Drs. Simon and Middleton on

Jan. 28th, 1893. After exposure to severe chill, he felt poorly on Jan. 21st and for three or four days afterwards, but was so much better on the 26th, that he thought of going to business. On this day, however, he had severe pain of a griping character in the abdomen.

He was first seen by Dr. Middleton, on Jan. 27th, when his abdomen was distended, rigid, and tender. His facial expression was pinched, he vomited occasionally, there was absolute constipation. P. 120, T. 101.

When seen by me on the 28th, the above conditions were much the same, the face was flushed, the vomit was coffee coloured. P. 130. Almost running.

Operation.—The abdomen was opened in the middle line, and a quantity of stinking sero-purulent fluid was evacuated. The abdomen was irrigated and drained. During the next ten days there was marked improvement and then a return of quick pulse with high temperature with signs of pleurisy on both sides.

Feb. 14th.—A collection of pus was detected in the line of the ascending colon and this was drained by a tube passed from the wound, and a needle was inserted into either side of the thorax, but no fluid was drawn off. There was again great improvement which continued until March 10th, when there was a return of the quick pulse and high temperature.

March 13th.—A collection of pus was found in the right iliac fossa and incision here evacuated several ounces, the cavity was drained. From this time steady convalescence followed; by the middle of April the patient was well.

Present Condition.—The patient remains well and without local trouble.

Case 21. *Perforative Appendicitis; general Peritonitis; median drainage; recovery.*—R. D., m., age 19, was admitted to the General Hospital on Feb. 27th, 1893. The evening of Feb. 20th the patient had severe pain all over the abdomen; on the 22nd this returned and he remained in bed until the 27th most of the day. During this time he was most indiscreet in eating and drinking, and vomited repeatedly; he also had

diarrhœa, and pain during and after micturition. He had suffered from two similar attacks previously.

On admission, T. 101, P. 120 small and soft, R. 30; constant hiccup and frequent vomiting. Facial expression very bad, belly distended, fixed and very tender; dulness over the hypogastrium, the left iliac fossa, and to some extent over the right. A loose motion was passed.

Operation the same night.—The bladder was emptied of six ounces of urine, but this made no difference to the dulness. Median incision above the pubes let out many ounces of foetid sero-purulent fluid, no perforation was recognised, the abdomen was irrigated and drained. A slow but steady convalescence followed—the only features worthy of notice being troublesome delirium for the first few nights. The patient was discharged well at the end of six weeks.

Case 22 (same patient as above). *Results of old Perforative Appendicitis; general peritonitis; median drainage; death.*—The patient was re-admitted October 17th, 1893. He had remained well until the morning of October 16th, when he had an attack of pain in the abdomen, and vomiting, and the bowels acted several times. On admission, P. 120, soft and dicrotic; T. 100·4, face very pinched and eyes sunken; abdomen moderately distended, very tender, hard, and fixed; no special fulness or hardness in right iliac fossa. He was very restless and delirious all night, and vomited at intervals, the vomit containing blood.

October 18th. Abdomen less tense and distended. T. 98·6, P. 120. Vomiting troublesome; feels better and looks so.

October 19th. Frequent vomiting in the night, blood in vomit; restless and excited; abdomen more distended; facial expression bad. P. 114, T. 101. Operation as before. Same kind of fluid let out, no perforation detected, irrigated, drained. He died three days later, having gone steadily from bad to worse, with quickening pulse, hæmatemesis, and violent delirium.

Post mortem.—Diffuse general peritonitis, with pus collected

in the pelvis and between the liver and diaphragm, the latter being displaced to the left. There were recent and old adhesions around the cæcum, and in the middle of this matting, the appendix was found with a concretion lying outside but close to it. The appendix was greatly distended and contained a larger concretion, which was lying free in the cavity and had not caused any ulceration, the whole of the large intestine distended with fæces from narrowing of the rectum by a band of adhesion from the previous attack.

Case 23. *Acute Perforative Gangrenous Appendicitis ; general purulent peritonitis ; median drainage and irrigation ; death.*—A. K., m., aged 22, was admitted to the General Hospital April 5th, 1895. On April 1st he suffered from severe colicky pain in the abdomen, chiefly in the umbilical region, and vomited. The pain continued, and the following day the patient was again sick, and the bowels acted from a dose of castor oil. The abdomen became increasingly tender and became also distended ; there was frequent vomiting. On admission the abdomen was very tender and distended, the face Hippocratic. P. 150, very small ; T. 100.

The abdomen was opened directly after admission, and a large quantity of foul pus evacuated. The appendix could not be easily found, so no prolonged search was made for it ; but a thorough irrigation of the whole belly cavity was performed, and drains introduced into the pelvis and each lumbar pouch. Death followed in ten hours.

At the autopsy, general peritonitis was found, but there was no collection of pus anywhere. The appendix lay in the most common position—beneath the lower end of the ileum, and pointing obliquely from below upwards and inwards. Its terminal portion was black and sloughing, and thin fæcal matter was oozing from it.

Case 24. *Gangrenous Appendicitis ; general Peritonitis ; removal of appendix ; drainage ; death.*—F., age 14, seen in consultation with Dr. Payne, Sept. 12th, 1891. On Sep. 8th patient had severe pain in the abdomen. Sept. 10th there was abdominal

pain and vomiting and a tender painful lump in the right iliac fossa. Sept. 11th, condition much the same, but vomiting had ceased. E. T. 100. When seen by me on Sept. 12th the abdomen was much distended in the lower half; she had vomited in the night, but was not vomiting at the time; no tumour could now be palpated; the abdomen was very tender and resonant everywhere; the patient was very restless, the face was deeply flushed and the eyes sunken. T. 101, P. 135.

Operation.—The surroundings of the patient were very unsuited to operation, but she was much too ill to be moved. Incision in the right semi-lunar line opened the abdomen, when a little brownish acrid fluid escaped, the intestines were deeply injected. The appendix was found to the inner side of the cæcum, surrounded by two or three ounces of foetid pus, it was ligatured at its base and removed. Towards its free extremity was a black gangrenous patch the size of a 3d. piece, the calibre was patent, there was no concretion. A drain was inserted. During the night the bowels acted three times, there was slight sickness, patient was extremely restless and delirious and managed to completely displace her dressing, the drainage tube being dragged out of the wound. She died the next day.

Case 25. *Stenosed Vermiform Appendix; small abscess; peritonitis; removal of appendix; death.*—L. W., f., age 14, transferred from the medical side of the hospital November 4th, 1893, with the following history:—Acute abdominal pain and diarrhoea for ten days, induced, it was believed, by eating unripe fruit. Vomiting occurred only once at the beginning of the attack. The patient was menstruating for the first time. When first seen by me she lay on her back with lower limbs flexed; the abdomen was rigid, distended, and generally tender; pain was complained of chiefly at the umbilicus. T. 102.5, P. 120, abdominal face marked. Under chloroform, distinct thickening could be recognised in the right iliac fossa. The abdomen was therefore incised here, and the general cavity was opened. Marked hyperemia of the peritoneum with tiny patches of lymph was noticed; the appendix was found lying to the inner side of

the cæcum, and around it a few drachms of sero pus. The appendix was removed, and the fossa was drained and packed with gauze. The first few hours following, there was improvement; but subsequently the symptoms showed advancing peritonitis, and the patient died on the third day.

Post mortem.—There was general purulent peritonitis. On examining the appendix, a complete stenosis was found in it three-quarters of an inch from its distal end, and beyond this was a small collection of turbid mucus. This stenosis was probably produced in an attack of appendicitis which occurred some months previously.

Case 26. *Relapsing Appendicitis; formation of abscess; drainage; recovery.*—J. H., m., aged 61, seen in consultation with Dr. J. Kerr, April 24th, 1893. For twenty years or so he had been subject to occasional attacks of pain with tenderness and occasionally swelling in the cæcal region, which had confined him to bed for some days each time. The last attack occurred as long as four years ago.

On April 10th, 1893, he had a severe attack of abdominal pain and noticed a tender swelling in the right iliac fossa. He had been troubled with constipation for some time. The days following he was confined to bed, and on April 22nd he had a rigor. When I saw the patient on April 24th a mass occupied the right iliac fossa, extending from the anterior superior spine to the umbilicus and backwards towards the loin. It was quite resonant in front and laterally the skin was red and œdematous; deep fluctuation could be felt.

Incision above the crest of the ilium in the mid-axillary line evacuated about a pint and half of foetid pus and gas. The finger passed freely behind the ascending colon and cæcum, but no attempt was made to find the appendix. A good recovery followed.

Present Condition.—Patient remains well.

Case 27. *Relapsing Appendicitis; eventual formation of Abscess which was non-adherent; drainage; Appendix not removed. Recovery.*—G. B., m., age 16, admitted to my wards, Nov. 25th, 1893, with a history of typhoid fever five years

before with an attack of appendicitis nine months previously, and two others more recently. He had a rather ill-defined swelling in the right iliac fossa, resonant over the front and with very doubtful fluctuation. With some days rest in bed, although the temperature was nearly normal, the swelling did not resolve, and as the temperature then rose to 101 I determined in view of the previous history to operate. Incision opened the general belly cavity, and immediatly in front of the swelling was the cæcum, by displacing this well inwards a collection of pus was found to its outer side and behind it. With due precaution some ounces of pus were evacuated, the appendix was not removed; the cavity was drained. The patient was discharged cured.

Present Condition.—Patient remains well.

Case 28. *Relapsing Appendicitis; removal of appendix; recovery.*—F. A., m., age 22, was admitted into the General Hospital under my care September 14th, 1892, with the following history. An attack of vomiting, pain in the abdomen and constipation in May of the same year. A second attack occurred in June and another in July, but it was not until the third attack that he suffered from localised pain in the right iliac fossa, nor did he recognise a tumour until it was pointed out to him in this attack. He was treated in a hospital for a month and, improving, was discharged. The attacks of pain returned, and the swelling in the right iliac region, and he was quite unable to follow his occupation. On admission, his condition was as follows:—Face emaciated and anæmic, abdomen distended with flatulence, constant rumbling, a colicky pain. A massive swelling extended vertically upwards from the right Poupart's ligament for about five inches, and laterally from the outer side of the iliac fossa to a little beyond the middle line. This area was dull to percussion, was not very tender, fluctuation could not be felt over it, the temperature was not raised.

Operation, September 16th.—Incision in right semilunar line found the tissues of the abdominal wall very indurated and leathery. The peritoneal cavity was opened, and, after separating adherent omentum, the appendix was found in a mass of

hard tissue behind the cæcum. It was removed with the greatest difficulty, and the wound was sutured in layers. No concretion or foreign body or occlusion existed in the appendix, and pus was not found anywhere. A good recovery followed, though the induration was slow in disappearing. The patient is now quite well.

Case 29. *Relapsing Appendicitis; small abscess; appendix removed; recovery.*—F. H., m., aged 7, first seen with Mr. J. D. Gill on Feb. 1st, 1894. *First* attack, Oct. 1893, general pain in the abdomen, vomiting thrice on the first day, bowels constipated, tongue furred. He was kept in bed for fourteen days. *Second* attack at the end of Nov. 1893, similar to the first. *Third* attack Dec. 27th, 1893, when he was first seen by Mr. Gill. The pain on this occasion was very severe, and there was much tenderness and resistance in the right iliac fossa. Constipation was replaced by diarrhœa. *Fourth* attack Jan. 20th, 1894, also a severe one, with diarrhœa and fever. A definite tumour was now palpable.

When seen by me on Feb. 1st a tumour the size of a pigeon's egg could be felt in the right iliac fossa. As there were no acute symptoms I advised six weeks complete rest. At the end of a month the tumour was much less, but the patient got out of bed surreptitiously and capered about, and after this the tumour again increased in size. This remaining, I advised removal of the appendix.

Operation April 20th.—Incision directly on to a well-defined mass. With much difficulty adhesions of omentum and cæcum were separated from the appendix which lay to the inner side of the latter. It was an inch and half long, doubled on itself, and contained some turbid mucus in its dilated extremity, but there was no concretion or cicatrix. Around the appendix were a few drops of pus. Drainage. A good recovery followed.

Present Condition.—The boy is in good health.

The concluding number of Mr. Taylor's papers "On Some of the Less Common Diseases of the Vulva" will be published in August.

REPORTS OF CASES.

BY T. SYDNEY SHORT, M.D.

Hemiplegia in a child aged 10 years, followed by complete mental aberration for three months. Recovery.

A little girl, Jessie H., aged 10 years, was admitted to one of my wards in a partially unconscious condition five months ago. She lay curled up in the bed on her right side, and resented any interference. There appeared to be some weakness on the left side of the body, but all her limbs were held stiff and she strained to keep them so if any attempt at passive movement were made, screaming out as if in pain. She would not, or could not, speak, and there was not the slightest sign that anything we said to her was understood, judging from her perfectly expressionless and idiotic-looking face. Her food remained untouched beside her until she was fed, and then she swallowed it readily, but she could not feed herself with a spoon placed in her hand. All evacuations were passed in the bed. On listening over the heart presystolic and systolic mitral murmurs were heard. She did not vomit; there was no sign of headache, no optic neuritis, and no appreciable alteration in sensation. To all appearance the child was an imbecile. We knew nothing of her antecedents till her mother came up a few days afterwards to see Dr. Kennan, my House Physician. The account she gave was rather curious. She said the child had had chorea some years previously, but was quite well, bright, and intelligent till about ten weeks before we saw her, when she had a fit on her way to school, with jerkings of one side, she did not know which side, followed by rigidity. She was taken to the Children's Hospital and had not recognised anyone since. So far as the mother knew the girl had remained in much the same condition until she was brought thence to the Infirmary.

In about a week's time she ceased to scream, and began to move herself about in bed by means of the right arm and leg. For two months she remained without any further sign of intelli-

gence and then she began to say a few words in a drawling manner, to take some interest in what went on around her, and to be more cleanly in her habits. From that time she has gradually improved mentally. She has now (May 15th) a well-marked left hemiplegia with rigidity. Her left foot and hand are inclined to be blue and soon grow cold if exposed. She can walk a little with support, dragging her foot on the ground. Her memory stops at the point when she felt her left heel go numb at the onset of the fit, and has a dim continuation in a vague recollection of the nurse and doctor who saw her on her admission. Up to the present time she has not exhibited any tendency to athetotic movements.

This case presents several points of quite special interest. Such a hemiplegia, due probably to embolism, is uncommon in so young a child. The view that it was caused in this manner is supported by the history of a preceding chorea and the presence of disease at the mitral orifice. There appeared at first sight to have been no premonitory symptoms, but on questioning the mother it transpired that about a week before the convulsion occurred the child had a "faint" when at school. It is quite possible that this was an attack similar to the fit but with failure to block a vessel, or perhaps with obstruction of one so small that no untoward results supervened. The absence of speech for nearly three months is worthy of remark. The lesion being on the right side of the brain in a right-handed child suggests that the aphasia was really a part of a general brain shock which showed itself by complete mental defection lasting longer in a child than would occur in the more stable cerebral structures of an adult. This however does not militate against the view that the lesion was in itself a severe one. It is extremely interesting to note that even at a time when to all appearance this child was unconscious of what occurred around her she was sensible to stimuli to an extent enabling her later on to recall them in memory sufficiently clearly for the recognition by her of the nurse and doctor whom she saw when she was first admitted.

A case of Rheumatic Erythema persisting on and off for 39 years.

Mrs. T. is a thin bony hollow-faced woman of 39 winters, and looks if anything several years older. She came under my care on May 6th for an attack of influenza, but it is not of this that I write. When she was admitted she was covered from head to foot with a scattered erythematous rash, and as this was very red in colour about the face and chest it was looked upon with some suspicion, especially as it was associated with a distinct rise in the temperature of the body. It might have been one of the rashes seen occasionally during the course of influenza, and due either to the influenza itself or, and this is not uncommon, to drugs such as antipyrin administered with a view to treatment. It might also have been the outward sign of an exanthematous fever, when the question of careful isolation would immediately arise. The whole surface of the skin was covered here and there with the rash. It consisted of blotches of a pink or pinky-red colour with irregular outline and slightly raised surface. On closing the eyes and drawing the finger over the skin the blotches could be felt quite easily. Some of them were arranged in curves, and here and there they curled about on the skin in almost complete rings. The face, breast, buttocks, and the dorsal surfaces of the hands and feet were most thickly covered. She said they did not itch, but smarted very much when they first came out, and then burned with a dull ache until they disappeared. This particular attack had been present for about a month, and it was evident that it was unconnected with the rise of temperature and malaise of a few days' standing for which she was admitted.

She told us that she had been subject to these smarting blotches during the whole of her life. She never remembered any time when they failed to come out after she had taken cold. From her description it appears that a chill or cold with her brings on a slight attack of gastric catarrh with vomiting and feverishness accompanied by a nettlerash, which usually persists for about fourteen days after the vomiting has subsided. The

present rash then had lasted longer than usual. She gave a distinct history of rheumatism. At sixteen years of age she had rheumatic fever which laid her up in bed for several weeks. Her heart was probably affected at the time, but it had only been within the last few years that she had felt any distress after exertion. We found her heart enlarged with some regurgitation through the mitral valve. She is quite sure that she was subject to this rash long before the fever occurred.

There are several unusual points about this case. Diet appears to have no effect in bringing out the rash. A careful survey of the diet nearly always elicits one or more substances liable to be followed by the eruption in these sufferers. In many cases of rheumatic erythema excess of meaty food is followed by the rash within a few hours. One case now under my care cannot take the smallest portion of beef or mutton without suffering from large red blotches appearing in about an hour's time and occasioning terrible irritation followed by pain. In the case of Mrs. T. it is clearly catarrhal in origin, and has troubled her from earliest childhood. She has never had an attack of gout, and there are no signs of gout, such as tophi, about her, but it is interesting to note that her urine is of low specific gravity, requires voiding during the night, is above the average in amount, and contains as a rule a small quantity of albumen.

UNDER THE CARE OF ALBERT LUCAS, F.R.C.S.
ASSISTANT-SURGEON TO THE GENERAL HOSPITAL.

Tubercular Mesenteric Glands; Abdominal Section: Recovery for a time; Subsequent Death from Peritonitis.

Alfred A., aged 21, a packer, was admitted into the General Hospital on August 16th, 1893, complaining of stoppage of the bowels and pain in the abdomen.

History.—For sixteen days before admission nothing had been passed by the rectum, except that the morning before admission he passed a small quantity of hard fæces. He had been carefully treated by a medical man at home, and had had several different kinds of enemata. For the last few days there

had been frequent vomiting, the vomit smelling "like motion." Micturition was somewhat painful.

Condition on Admission.—Facies hypocratica well marked. Abdomen tense and hard; does not move with respiration; tympanitic on percussion except in the extreme lower part, where the note is duller. It is moderately tender all over. Rectal examination shows nothing abnormal. Temperature 100° F.; pulse 84 and of good volume. As there did not seem to be any immediate urgency about the case, abdominal section was not at once performed. He was given ext. belladonnæ gr. $\frac{1}{4}$ bis die, and fed entirely by the rectum. During the next six days the bowels were moved freely. The abdomen became much less painful and more flaccid. Some fulness was then felt in the left lower abdomen, both from the front and through the rectum.

September 1st. Temperature has varied during the last few days from 100° F. to 104° F. No change in general condition.

Abdomen opened in middle line between pubes and umbilicus. Intestines adherent to each other. A hard mass, as large as a hen's egg, was felt in the mesentery, and, on examination, proved to be a tubercular gland. An endeavour was made to bring the coil of intestine, in the mesentery of which the gland was situated, out into the wound, but owing to adhesions it was found to be impossible. The gland was then incised, some pus evacuated, and a rubber drainage-tube inserted. After this he steadily improved, the temperature hardly ever being above normal.

On September 18th he developed a rash, and was removed to the Fever Hospital.

On November 17th, came to General Hospital looking remarkably well and much fatter. Wound soundly healed; some fulness still to be felt in the left lower abdomen.

February 13th, 1894. Re-admitted, with history of absolute constipation, pain in the abdomen, and vomiting for three days. He had been going on well until this time. The abdomen showed the usual signs of peritonitis. A turpentine enema was

given at once, and a suppository of ext. belladonnæ, gr. $\frac{1}{4}$, every four hours.

Feb. 14th. The abdomen was opened through the cicatrix. Intestines adherent to each other, distended and covered with lymph. In the left iliac fossa a collection of pus was tapped and a rubber drain inserted. He rallied somewhat after this, but on the following day became delirious, and died Feb. 17th, four days after re-admission. *Post mortem* examination showed signs of an acute attack of peritonitis on the top of an old one. Some breaking down tubercular glands were found in the mesentery. Other organs healthy.

Remarks.—I had intended publishing this case as one of those cures of tubercular disease when abdominal section is performed and when but little more than the section is done. It well illustrates the fact that a patient with tubercular mesenteric glands is liable to their breaking down and bursting into the peritoneal cavity and causing death from peritonitis. In the *post mortem* room tubercular glands are very frequently to be found in the mesentery, and which have never given rise to any symptoms.

I had hoped to have been able to bring the coil of intestine, in the mesentery of which they were situated, outside the abdomen, and either excise or scrape them out; this I was unable to do owing to the adhesions, and moreover, the state of the patient did not permit of a much more prolonged operation.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

From Messrs. BURROUGHS, WELLCOME, and Co., a specimen of dried Anti-diphtheritic Serum in the form of fine golden scales. This preparation is said to keep well. It is supplied in tubes at 1s., the contents of each tube representing 10 cc. of serum.

From Messrs. SOUTHALL BROS. and BARCLAY, specimens of their Improved Sanitary Towels, consisting of the same material as hitherto, but made up on an improved plan.

From Mr. RECK, Heating and Ventilating Engineer, of Copenhagen, a prospectus of his disinfector, together with a report thereon by the Medical Officer of Health to the Staffordshire County Council. The apparatus appears, from the report, to be very effective, and cheaper than those commonly in use.

New Books, etc., Received.

- Essays in Heart and Lung Disease. By ARTHUR FOXWELL, M.A., M.D., F.R.C.P., Physician to the Queen's Hospital, Birmingham. London: Charles Griffin and Co. Lim. 1895.
- Formulaire des spécialités pharmaceutiques, composition, indications thérapeutiques, mode d'emploi et dosage, à l'usage des médecins, par le Dr. M. GAUTIER, ancien interne des hôpitaux, et F. RENAULT, pharmacien de 1re classe, lauréat de l'École de pharmacie. Paris: J. B. Baillière 1895.
- Text-book of Operative Surgery. By Dr. THEODOR KOCHER, Professor of Surgery in the University of Bern. Translated from the second German edition by Harold J. Stiles, M.B., F.R.C.S., Senior Demonstrator of Surgery in the University of Edinburgh. Illustrated. London: Adam and Charles Black. 1895.
- La Méthode Brown-Séquard, Compendium des Médications par les Extraits d'organes animaux, par le Dr. M. BRA. Illustrated. Paris: J. Rothschild. 1895.
- The Eye in its Relation to Health. By CHALMER PRENTICE, M.D., Chicago. Bristol and London: John Wright and Co. 1895.
- Burdett's Hospital and Charities Annual, 1895. By HENRY C. BURDETT. London: The Scientific Press Lim. 1895.
- Some Methods of Chest Examination supplementary to Auscultation and Percussion. A Paper read at Boston by EDWARD O. OTIS, M.D., etc. Boston: Damrell and Upham. 1895.

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THE
BIRMINGHAM MEDICAL REVIEW.
AUGUST, 1895.

ORIGINAL COMMUNICATIONS.

ON SOME OF THE LESS COMMON DISEASES
OF THE VULVA.

BY JOHN W. TAYLOR, F.R.C.S., ENG.

(Continued from page 272, Vol. xxxvii.).

VIII.—KRAUROSIS VULVÆ.

("Vascular degeneration." "Progressive cutaneous atrophy
of the Vulva.")

I PURPOSE devoting this, the last of my present series of papers, to a consideration of the disease now known as Kraurosis Vulvæ. The name was first given by Prof. Breisky and has met with very general acceptance. It is derived from the Greek word *κραῦρος* (dry, parched, brittle). This does not perhaps directly convey the idea of contraction which is the most prominent objective feature of the fully developed disease, but *κραῦρος* as the opposite of *μαλακός* (soft, smooth, supple, yielding) is appropriate as conveying in brief a fair idea of the change produced at the vaginal entrance by the long-standing presence of the complaint.

The onset of the disease occurs about late middle life (in many cases at the time of the menopause) and the first evidence of its presence is usually one or more little red or purple spots of superficial erosion on the surface of the labia minora or vestibule. These are exceedingly sensitive, their touch causes vaginismus and sexual connection is painful or impossible. These little

erosions are very slowly progressive ; healing occurs in one part but extension in another. The healing is accompanied by brittleness, rigidity, and contraction, and finally the patient may be said to "recover" with a pre-senile or cicatricial contraction of the vaginal entrance which tears rather than yields to any extension or dilatation, but, if left alone, is generally painless.

The disease was thoroughly investigated and first described in detail by my former master and colleague, Mr. Lawson Tait, who frequently, both in his published writings and in conversation insisted on its importance and intractability.

In the first edition of his book on "Diseases of Women," published in 1877, Mr. Tait wrote as follows :—"The nymphæ are subject to a peculiar degenerative and atrophic change, which occurs only at or after the climacteric period. It is a very distressing complaint, and one of the most intractable with which we ever have to deal. It is very often, but by no means always, associated with vascular caruncle of the urethra, of which I shall speak farther on. This affection has been alluded to by Simpson and various other authors, but no description which I have seen includes all the facts that may be observed in connection with it. It is always confined, in my experience, to the mucous membrane on the inner surfaces of the nymphæ and is never met with on the labia majora or in the vagina higher than the vestibule. It is a very frequent cause of the total suspension of marital intercourse, and is the real disease existing in a large number of cases of so-called vaginismus, a term which is widely used as a cloak to cover ignorance and carelessness.

"A patient suffering from this disease will nearly always be found to be over forty years of age, and she will state that she has a slightly yellow discharge, a good deal of scalding when she passes water, and that she suffers excruciating agony on any attempt at intercourse. This latter is always the first symptom in date ; and when a case comes under the notice of the gynaecologist it will generally be found that intercourse has been discontinued for many months if not for several years. The misery is very great, and a great deal of the climacteric drunken-

ness, too common among women, is due to this disease. When the labia are separated and an inspection made one or two spots of redness on the mucous surface of the nymphæ will be observed, varying in colour from a palish brick-red to a light purple; and if these be touched they will be found to be exquisitely tender. If very carefully observed in a chronic case these spots will be found to be very slightly below the level of the normal mucous membrane. If a case be watched for a long time it will be found that the spots are transitory and spreading; that after lasting for some months the red colouring either entirely disappears from the spot observed and comes out at another, or extends serpigiously, disappearing from the old site as it progresses towards the new. This process is very slow, but it explains the intractable nature of the disease which is seldom content until it has passed over the whole mucous surface of the nymphæ. During its progress the vestibule of the vagina slowly contracts, until, as in the case of a widow lady now under my care, it may be so reduced as barely to admit a finger, even though the patient has borne several children."

This contraction-stage has been well described by Professor Breisky. In his original paper (*Centr. f. Gyn.*, June 6th, 1885), quotations from which are given by Mr. Tait in the last edition of his book on Diseases of Women, we find the following points mentioned as characteristic of the disease:—"Apparent deficiency of the nymphæ, the integument from the mons veneris to the meatus urinarius passing smoothly over the clitoris without folds. . . . On separating the labia majora, the mucous membrane below the urethra is stretched, and projects as a transverse fold. . . . An effect of the atrophic process is a 'stenosis vestibularis,' together with which the tissues become unyielding, and readily tear. . . . At the places of greatest atrophy the integument is whitish and dry, sometimes covered with a thick somewhat rough epidermis, while the neighbouring parts are shining and dry, and of a pale greyish red."

The foregoing extensive quotations are so good and true that I feel convinced I do better to reproduce them than to attempt

any fresh detailed description of the complaint. What I purpose to do is to take the disease from its clinical aspect, and to draw attention to some special points in its clinical history and to suggest certain considerations which may perhaps help the practitioner to more readily recognise and understand the disease.

In its initial stage, the stage of "vascular degeneration," so well described by Mr. Tait, this disease (and urethral caruncle, to which it is very closely related) may be said to be *the* cause of *persistent climacteric dyspareunia of the vaginal entrance*. In other words, if a married woman of 45 to 50 years of age complains of pain at the vaginal entrance which has for some time prevented intercourse, a careful examination will be almost certain to reveal either a urethral caruncle or one or more patches of "vascular degeneration" on the nymphæ or vestibule.

Because it is a disease in which nerve-endings are either exposed or implicated in a thin atrophic contraction of the parts affected, and pain on touch is distressing, the symptoms complained of are apparently of an exaggerated type, and there is what may be termed a disproportion between these and the physical signs; the symptoms are severe or the patient insists on their importance, the signs are sometimes scarcely visible. For instance, the patient will sometimes complain of the yellow discharge (noticed by Mr. Tait) when no discharge can be discovered on inspection; or, what is at first stranger still, of a "dreadful bearing down," when examination fails to make out any but the faintest degree of prolapse. This symptom of "bearing down" as associated with kraurosis, or any sensitive sore of the vaginal entrance, has not been noticed I think by previous writers, but in some cases I have found it to be the chief complaint of the patient. In such cases, when an examination is made and only a spot of redness or a contracted vaginal entrance is found, with no evidence of prolapse or only the slightest suspicion of cystocele above the contraction, it is by no means easy to understand the symptom complained of, and the practitioner may easily imagine that there is no reason for the complaint of the patient.

The explanation of the symptom lies, I believe, in the sensitiveness of the vaginal entrance, and it is well to recognise that any cause of hyperæsthesia in this situation—an abrasion, a sore, a patch of vascular degeneration, a urethral caruncle, or sensitive remains of the hymen—may occasionally cause the symptom known as “bearing down.” When occasioned by soreness, I take it to be produced by an unconscious continuous effort on the part of the patient to extrude this sore part from the pressure caused by the infolding of the vaginal entrance. When occurring as a later symptom, after marked stenosis has taken place, it has appeared to me that the ring of contraction itself gave but little trouble to the patient until a small cystocele pressed from above on the sensitive region, and made the patient specially conscious of her infirmity. Whether this be the case or not, however, it is the sensitiveness of the vaginal entrance which is the key to the sensations and complaints of the patient.

Not infrequently, I think, the disease remains throughout a secret of the patient's. At first, when marital relations are suspended, it may be a grievous mental trouble to the wife to find herself so far unfitted for sexual habit; but if, as often happens, the march of time has brought to both husband and wife that “philosophic calm” which views any change of this kind with equanimity, relations directly sexual are practically forgotten, and their absence does not disturb the simple companionship and friendship which may even be deemed better fitting the downward path which leads them to the final bourne.

In cases of this kind, when there is no attempt at intercourse, the disease becomes bearable, the purple spots of erosion gradually disappear or wear themselves out, and, apart from the contraction and disability, the patient may remain for years, or for the rest of her life, free from pain and practically cured. It is only when some fresh trouble occurs, such as prolapse or accidental abrasion, that the hyperæsthesia is again “lighted up” and life becomes a burden.

Whether the stage of atrophy and contraction has any

necessary or invariable connection with the little purple patches of erosion so frequently found on the nymphæ in the earlier stages must be considered as at present doubtful. Certainly I have met with some cases in which extreme contraction had occurred, but at no time, so far as could be ascertained, had this been preceded by the characteristic purple eruption; and one case which occurred in the practice of my colleague, Mr. Christopher Martin (to whom I am indebted for permission to refer to this case), appears to establish the fact that kraurosis vulvæ may proceed to a high degree of contraction and exhibit no eruptive or visible lesion other than the contraction. In this case kraurosis followed the operation for removal of the uterine appendages, and Mr. Martin was fortunately able to watch the case throughout its course, and from beginning to end no spots of local degeneration were found upon the nymphæ.

Again, the occasional accidental discovery of an exactly similar condition at the vaginal entrance of very aged women who have never complained of local disease, and have long survived their husbands, appears to show that contraction may sometimes naturally follow from age and disuse, and so far may be claimed to justify the term of "pre-senile" which I have used in an earlier portion of my paper.

The disease must, I think, be regarded as essentially incurable. In the early stages (erosion period) very marked temporary relief may be afforded by the use of the thermo-cautery. After its use the erosion quickly heals, and, provided the parts are left absolutely at rest, the benefit may be quite prolonged or even permanent. But the parts are not restored to a normal condition by the healing of the erosion, and if the local improvement be followed by fresh attempts at intercourse, the relief is transitory and the erosion returns. In many cases it returns without this. For this reason Professor Martin, of Berlin, has practised excision of the affected area, and in some cases with considerable success. In a recent paper by Dr. Reed, of Cincinnati (*New York Med. Journal*, September 29th, 1894), this operation is strongly recommended, and the treatment

claimed to be a curative one. Six cases are reported ; but on a careful examination of these reports, it does not appear that more than one of the cases can be regarded as bearing out the sanguine statements of the author. The operation is however worthy, I think, of careful trial, and, in some cases at least, may be expected to be of greater service than the methods of treatment hitherto adopted. The chief difficulty appears to lie in gauging the (future) limits of the disease, and therefore the extent of the incisions. These should be sufficiently extensive, or return of the disease may be expected.

The best palliatives short of operation are "patience" and a hopeful prognosis. A thorough explanation of the disease and the assurance that the most painful stage is transitory and will wear itself out in time, often very greatly relieves the nervous anxiety of the patient and, sooner or later, commands her respect and confidence.

Cocaine ointments have been largely recommended, but in my own experience these have proved disappointing. For local applications I prefer a warm antiseptic wash (ac. boracic 3 ii. ad O i.), followed by the use of a little antiseptic ointment (ung. iodoform grs. xl. ad 3 i.).

THE INGLEBY LECTURES, 1895.

GASTRIC PERFORATION.

DELIVERED AT MASON COLLEGE.

BY GILBERT BARLING, M.B., F.R.C.S.

CO-PROFESSOR OF SURGERY IN THE COLLEGE.

THE SURGICAL TREATMENT OF PERFORATING ULCER OF
THE STOMACH, WITH TABLES OF OPERATIONS.

As an introduction to this subject I propose, in the first instance, to recall to your minds some of the anatomical features and relations of the stomach which bear directly on the question of perforation and its treatment. In text-books of anatomy the organ is described as situated in the left hypochondrium, the epigastrium, and the right hypochondrium; and it is depicted as lying almost transversely across the abdomen, with its pyloric orifice some inches to the right of the cardiac opening. This hardly represents things as they are. To get a true appreciation of the shape and position of the organ, it is necessary to examine it from several points of view; and I here show you drawings to illustrate three aspects—(1) from the front after opening the abdomen, (2) by transverse section through the ninth dorsal vertebra after removal of the diaphragm, and (3) by vertical sagittal section passing through the left orbit. From these combined, it will be seen that most of the stomach occupies the left hypochondrium, that a small part extends into the epigastrium, and that none of it reaches the right hypochondrium. The picture of it as a nearly transverse organ is ridiculously unlike what it is. It really occupies a very different position, passing obliquely from the back to the front of the abdomen, and very obliquely from the cardiac orifice just under the diaphragm downwards to the level of the pylorus several inches below the œsophageal opening. What is described as the lesser curvature is a comparatively small but important area looking not almost directly upwards, as commonly represented,

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but mainly to the right and only slightly upwards. The greater curvature is the bulk of the stomach, and lies chiefly to the left side of a line drawn through the œsophagus, and looks not so much downwards as to the left. Further, as will be seen from this plate from Braune's Atlas, the stomach, beginning at the cardiac orifice, loops round the left edge of the liver, lies extensively in contact with the left arch of the diaphragm, and has the spleen to the left and behind it. The region thus exposed by removing the diaphragm, gives us a very good idea of the space which is generally occupied by sub-phrenic abscess from gastric perforation. This space has for its limits the left half of the diaphragm above, the left lobe of the liver and stomach below, the falciform ligament of the liver to the right, and the spleen and diaphragm to the left. That is the position of things if the stomach is moderately full. If it is empty, as in this other of Braune's illustrations, the splenic flexure of the colon pushes up between the left end of the stomach and the diaphragm, and so completes the boundaries of this sub-phrenic space, a locality of considerable importance in the study of gastric perforations. The close relation of this space to a large area of diaphragm explains the facility with which, either by direct perforation of the diaphragm or by the lymphatics, infection of the pleura and lung on the left side takes place. Another noticeable point is the depth of this sub-phrenic space from the anterior abdominal wall to the back, and the difficulty of securing efficient drainage by an anterior incision alone.

Another aspect of the stomach of interest is the anterior surface, a frequent seat of perforation, and one which would be comparatively easy of access if the generally accepted idea of its position were correct. How erroneous is this idea of a stomach lying transversely is shown when the examining hand passes up between the liver and the stomach. Instead of a search easily made, it will be found that the furthest limit of the anterior surface in some subjects is inaccessible unless the whole of the hand is introduced. The importance of this is evident if it is remembered that not a few perforations occur on the anterior

surface close to the lesser curvature and near the cardiac orifice. It will be readily understood how difficult the closure of an opening in the stomach may be in this position, and how easily it may be overlooked if an examination is made simply of that part which is easily reached.

As will be shown later, some perforations occur on the posterior surface of the stomach. How are these to be approached? Conceivably by opening the anterior wall of the organ; but also in other ways. If, as is most probable, a posterior perforation encroaches almost upon the lesser curvature, it will be most accessible by tearing through the gastro-hepatic omentum, which may be done without serious risk of damaging any large vessels or interfering with the blood supply to the stomach. Should the perforation be lower down the posterior surface, tearing through the great omentum may give easier access without damaging the blood supply either of stomach or colon. If excision of the ulcer is attempted, it must be borne in mind that the main blood supply to the stomach is arranged along the two curvatures, and that the vessels here are capable of giving rise to very free hæmorrhage. If the lesser curvature were the part involved, very considerable difficulty might arise in controlling the bleeding.

In considering the surgical treatment of gastric ulcer, the main question demanding attention is that of operation when perforation has actually occurred. This, however, is not the only condition for which the aid of the surgeon has been invoked. Within the last year or so the proposal has been definitely made to intervene in gastric ulcer which has not perforated, but in which the symptoms are so prolonged and so painful, or hæmorrhage is so profuse, as to threaten speedily to end the patient's existence. Against such intervention much may be said, especially if the proposed treatment is the excision of the ulcer. It requires no demonstrating that the subjects of gastric ulcer are not such as we should select for operations of expediency only. It is one thing to operate in the face of dire necessity, such as perforation, from which spontaneous

recovery is so rare, and quite another to operate for symptoms, even such as severe hæmorrhage, through which the subjects of gastric ulcer so often scramble, as it were, only by the skin of their teeth. Apart, however, from these general considerations which are opposed to operation, there are certain local ones which must not be forgotten. The physician is at present unable to indicate the position or extent of the ulcer, and he cannot say whether it is adherent or not to the adjacent structures. If the ulcer is high up on the lesser curvature and near the cardiac orifice, a more difficult task than its excision and reliable suture of the gap left can hardly be undertaken. If it were, in the neighbourhood of the pylorus, practically pylorotomy would be required; and if the ulcer were on the posterior surface, and perhaps adherent to the pancreas, the difficulty of approaching and excising it, either through the anterior wall of the stomach or by tearing through either the greater or the lesser omentum, would expose the patient to extreme peril. Apart, however, from the question of position, the extent of the ulcer would often be a bar to its removal. It is difficult to generalise as to the ordinary size of gastric ulcers, but such as have been long existing are often very extensive, and occupy not infrequently both surfaces of the stomach, extending like a saddle across the lesser curvature. Excision of such, apart from the difficulty of the operation and the time it would occupy, would be practically impossible, owing to the amount of stomach tissue which would be removed and the difficulty of repairing the breach in the organ.

The arguments against excision would be met to some extent by the provision of an instrument as efficient as the cystoscope, which would allow inspection of the stomach walls and the determination of the site and extent of the ulcer.

Whilst formal excision of gastric ulcer is, in my opinion, outside the bounds of what a surgeon may justifiably advise, a proceeding somewhat less severe than this deserves careful consideration.

In the *Central. f. Chirurgie*, No. 30, 1894, and in the same

journal, No. 51, 1894, Kuster relates two cases of gastric ulcer in which he operated either for hæmorrhage or for this plus dilatation. Briefly his cases were as follows:—(1) A female, aged 21, the subject of gastric symptoms for three years, suffered from severe and repeated hæmatemesis in October 1892, and in August 1893. Laparotomy was then performed and the dilated stomach opened by an incision through the anterior wall to reach an ulcer on the posterior wall near the pylorus. The ulcer, which was deep and closely adherent to the pancreas, was touched with the actual cautery. The pyloric opening was so contracted that it could not be found, and gastro-enterostomy was therefore performed. A good recovery followed, there was no return of the hæmorrhage, and when last seen the patient was able to work and to take her usual food. (2) A male, aged 42, for six years the subject of gastric ulcer, suffered then from melæna, hæmatemesis, and dilatation of the stomach. Laparotomy was performed, the stomach opened through the anterior wall, the actual cautery applied to the ulcer, and, as in the last case, gastro-enterostomy was performed. Recovery was not so easy as in the first case, but at the end of six weeks the patient was able to take solids without discomfort, and later was in good health and considerably increased in weight.

The record of such cases as these makes it impossible to take up an attitude of negation towards the operation Kuster has formulated, and it is probable that he will soon have imitators.

Another rare condition of surgical interest is the formation of a dense mass of inflammatory thickening and adhesion in the epigastrium simulating growth in connection with the liver or stomach. This is due to an ulcer on the anterior wall of the stomach which, without actually perforating, sets up a localised peritonitis, becomes adherent to the liver and perhaps also to the abdominal wall, causing much discomfort and interference with the stomach functions. Two very interesting examples of this kind are described by Terrier, *Bull. et Mem. Soc. de Chirurgie*, July 1894. The first was a female, aged 62, who in addition to symptoms of gastric ulcer presented a hard rounded

tumour below the left costal border. Malignant growth was suspected and an exploratory operation undertaken. This revealed adhesion of the left lobe of the liver to the stomach and to the abdominal wall, and some enlarged glands in the neighbourhood. Some of the adhesions were broken down and a portion of the thickening removed, which proved microscopically to be only fibrous tissue. Pain and discomfort gradually subsided after the operation; a year later the patient was well, had gained five kilos. in weight, and the tumour had disappeared.

In the second case, a male aged 65, seen in January 1885, there were severe crampy pains in the stomach, painful hiccup, vomiting of blood and mucus, and melæna. A painful swelling could be palpated over the liver at the epigastrium, increasing towards the stomach and umbilicus; the patient could take only iced water, and was extremely emaciated. Malignant growth of the stomach was diagnosed, and treatment was directed simply to the relief of pain and to providing the easiest possible nutriment. Very slow but persistent improvement followed, and the tumour slowly disappeared. It was not until 1890 that the patient was able to take ordinary food, but he remained well nine years after malignant disease in the stomach was diagnosed. Such cases are of great interest, not so much because of any considerable benefit likely to arise from operation as because they give an explanation of some of the cases in which growths are reputed to have disappeared after a simple exploratory incision into the abdomen. They also justify the utmost reserve in expressing a positive diagnosis as to the malignancy of new formations in this region.

Before dealing with the occurrence of perforation, it is necessary to make a few general observations on the position of gastric ulcer, and the liability to perforation in particular localities.

A large majority of these ulcers occur on the posterior surface and the lesser curvature, a few occupy the region of the pylorus, and a still smaller number involve the anterior surface of the stomach. The incidence of perforation does not, however, in

the least degree correspond to the incidence of locality ; ulcers on the anterior surface perforate with great frequency, those on the posterior surface rarely in proportion to their actual number, whilst those on the lesser curvature perforate comparatively often. The explanation of this varying tendency to perforation is found mainly in the relations of the stomach. The posterior surface, and to a less degree the smaller curvature, tend, with the advance of the ulcer to the surface, to become adherent to adjacent parts. The anterior surface, on the contrary, owing chiefly to mobility, rarely becomes adherent. Apart from the existence of protecting adhesions, I think another influence may have something to do with the frequency of anterior perforation. The symptoms of ulcer on the anterior wall are apt to be less marked than those on other parts of the stomach, and they are occasionally quite wanting. Hence the subjects of them are probably more careless as to the quality and quantity of their diet, and the ulcers are more subject to undue stretching and to traumatism, which are the final causes usually of perforation. In Table I., of cases operated on for perforation, twenty-two out of thirty-one patients are described as suffering from anterior perforation, though it is evident that the lesion in several cases might quite as correctly have been described as being on the lesser curvature. The tendency is also towards the cardiac end rather than the pyloric, and it is only in about half the anterior perforations that they are so situated as to be accessible with moderate ease. In five of the thirty-one cases the perforation is described as posterior ; and here, again, the tendency is to involve the lesser curvature. In two patients the perforation is ascribed to the lesser curvature.

The liability to perforation is greatest in young women, especially between the ages of 17 and 25. There is also a certain liability, though nothing like so great, in males ; and in them the incidence is chiefly between the years of 40 and 50.

In discussing the treatment of perforation, it will be demonstrated how extremely important it is that as brief a time as possible shall elapse between the occurrence of the accident

and the operation for its relief. This is indeed the key to the whole position when the perforation takes place freely into the belly cavity. It is therefore necessary to study carefully the symptoms and signs of perforation of the stomach, especially in the early stages, so that hesitation and doubt in diagnosis, with delay in operation, may give place to certain recognition of the condition and speedy treatment.

It may be taken as a rule, that the patients will have suffered from symptoms which, if not typical of gastric ulcer, point to the stomach as the seat of some lesion. This was the case in twenty-three of the thirty-one patients in Table I.; in one no history could be obtained, as he was unable to speak English; in four the previous history is not recorded; and in three others, including one of my own cases, the ulcer may be spoken of as "latent," there being not even a history of indigestion to suggest its presence. The value of the previous history is, then, very great, as indicating the stomach as the organ from which the mischief arises. Other points which should be enquired into are the time at which the last meal was taken, the position occupied and the particular act engaged in at the time of the acute onset. Perforation almost always occurs when the stomach is full or partly so, commonly when the patient is in a more or less vertical position, and frequently from some particular act or exertion, such as stooping to pick up something, sneezing, or lifting a heavy weight. The details of sex, age, digestive history, the state of repletion of the stomach, the action of the patient, should be carefully enquired into when gastric perforation is suspected.

The moment at which perforation occurs is almost invariably marked by sudden, acute, abdominal pain, often so intense as to produce faintness and it may be great collapse. Death has been thus immediately induced. The pain is variously described as burning or scalding, and is localised generally, in the first instance, above the umbilicus in the epigastrium, the left hypochondrium, or it may be in the lower part of the thorax. The feeling of faintness speedily follows and, as this passes off,

one or two vomits may take place, though this is perhaps hardly the rule. The abdominal wall will now be found to be retracted and the muscles rigid, as though by packing the viscera together they were endeavouring to limit extravasation. Respiration is usually entirely thoracic, quick and shallow; the temperature is subnormal, the pulse quick and feeble. What course the symptoms will now take depends upon the position of the ulcer, the amount of distension of the stomach, and the position the patient occupies. The extravasating material may spread widely into the peritoneal cavity; it may remain for a time localised between the liver and stomach, eventually escaping from there into the general cavity; or it may remain localised under the diaphragm and produce subphrenic abscess. The first or acute development appears to be the most common result, and the symptoms are those of an intense and rapidly spreading peritonitis, how rapid may be judged when I tell you that within six hours of perforation I have evacuated two to three pints of semi-purulent fluid from the abdomen. Marking the onset and advance of peritonitis, pain, which I have described as first localised, now spreads over the whole abdomen. Retraction steadily gives way to distension, from intestinal paralysis and from free fluid and perhaps free gas in the peritoneal cavity. Varying resonance and dulness may be found in different parts of the abdomen; but it is only in the region of the liver that this has distinct clinical value. Diminished liver dulness may be explained by more than one condition. Absence of liver dulness is almost certainly due to free gas in the peritoneal cavity derived from a perforation. If this symptom be present, it is valuable; but its absence does not negative the existence of perforation. As collapse passes off, the temperature begins to rise, and generally runs up to 101° or 102° ; the respiration still remains quick and thoracic; the pulse becomes fuller and quicker. With the advance of peritonitis, vomiting generally occurs, the abdomen becomes tender everywhere, the lower extremities are flexed, the face becomes pinched and sunken. In this the most acute result of perforation, death follows in

from twenty-four to seventy-two hours, though occasionally the fatality may be somewhat longer delayed. If rapid extravasation does not occur, but the escaping stomach contents are for a time circumscribed between the liver and stomach, the symptoms are modified, and we have the sub-acute development. The pain and collapse of the first leakage and the associated symptoms may be just as marked, but as the patient rallies from the collapse, rapid peritonitis does not follow. Rigidity and tenderness to some extent remain at the upper part of the abdomen, the temperature runs up somewhat, the pulse remains unduly quick, but the patient improves so much that doubt is not unnaturally cast upon the diagnosis of perforation. Some hours later—it may not be for a day or two—a further leakage takes place, which again may be marked by the acute pain and collapse of the onset. With this further leakage, and sometimes without its intervention, wider extravasation of stomach contents takes place, and general peritonitis is established, running the course sketched out above. This is induced often by incautious movements of the patient, or by the administration of food, medicines, or stimulants by the mouth.

So far I have been speaking of the acute and the sub-acute results of perforation. In the first, acute general peritonitis follows immediately upon the symptoms which mark the perforation; in the second there is a distinct interval between the two. I have now to describe a third possible result, viz., localised abscess formation, which by contrast with those previously described may be regarded as the Chronic result. The abscess is usually, though not necessarily, sub-phrenic, and is generally under the left arch of the diaphragm, though it may be under the right. Abscess formation is not so common as the two other and more acute results of perforation, and I have only found records of six operations performed for this condition, see Table II. Left sub-phrenic abscess being the common condition resulting, what I have to say is based mainly on that condition.

Perforation of gastric ulcer as a cause of abscess under the

diaphragm has been long recognised, but I do not think it is as familiar to the profession as it should be, and I should like therefore to refer to two excellent papers on the subject, one by Penrose and Dickenson, *Tr. Clin. Soc.*, vol. xxvi; the other by Ewart, *Clin. Journal*, July 25th, 1894. In this Chronic result of perforation, the *onset symptoms* of localised pain and faintness are just as marked as in those cases with a more acute development. Following this there may be an interval of some hours, or even a day or two, in which symptoms of any kind are very little marked. It is however more common to find tenderness and rigidity at the left hypochondrium and epigastrium, some fixity of the abdomen and quickened respiration. Then with greater or less rapidity evidence arises of suppuration, the temperature runs up and often varies rapidly, the patient sweats a good deal, one or more rigors may occur, the pulse is quick, the patient looks ill, but has not the Hippocratic face of advancing peritonitis. With the general evidence of pus formation local signs present themselves pointing to a gas-containing cavity which tends to infect the pleura and lung of the same side. A swelling, or at all events a fulness, presents in the epigastrium. The physical signs are those of pneumo-thorax, but they are in a position different from that which pneumo-thorax occupies. There is hyper-resonance at the upper part of the abdomen extending somewhat up the thorax, but not to its summit, where normal phenomena are to be found. The tympanitic resonance may extend upwards behind the sternum to a remarkable degree, perhaps into the axilla and posteriorly also. With this resonance there may be amphoric breathing and a bell sound may be obtainable. The heart undergoes displacement to some extent, but not to the degree that it does in pneumo-thorax. With this tympanitic resonance in front evidence arises of pleurisy or of lung consolidation. Such are the signs of sub-phrenic abscess, in which we have generally a collection of pus and gas, limited above by the left arch of the diaphragm, to the right by the falciform ligament of the liver, below by the left lobe of the liver and the stomach, to the left by the spleen, and in front by the

anterior abdominal wall. This is very likely to set up pleurisy, empyema, pneumonia, or lung abscess, or a combination of these, and death is usually brought about by one of these complications. Although it might be anticipated that general peritonitis would eventually result by extension, this appears to occur only exceptionally, certainly not in half the cases.

The progress of localised suppuration to a fatal termination is less rapid than in the more acute conditions I have previously spoken of. I find that eight cases lived an average of more than twenty days each, the shortest time being six days and the longest fifty. It might be inferred from this that the mortality is not so severe as it is after the acute developments of perforation, but unhappily I am unable to confirm this. So far spontaneous recovery, or recovery after operation, has been rare.

Whilst sub-phrenic abscess on the *left side* is the rule, the collection may form under the *right* arch of the diaphragm and be associated with similar auscultatory phenomena to those which occur on the left side and give rise to implication of the right side of the chest (see Ewart's paper). In my own case of abscess following gastric perforation (see Table II.) it is difficult to say where the pus was localised; it was not so high as a sub-phrenic collection, and it seemed too distinctly left-sided and limited to have occupied the sac of the great omentum, though this is undoubtedly one of the cavities which may be implicated.

Let me recapitulate the essential points in the diagnosis of the perforation of gastric ulcer. The patient is generally a young woman, or rarely a middle-aged male, with a history of gastric ulcer or of stomach indigestion, though occasionally the ulcer is "latent." The moment of perforation is marked by extreme pain, in the left upper part of the abdomen as a rule, with collapse. This is followed speedily by rigidity of the abdomen, thoracic respiration, and a sub-normal temperature. So far the history of all cases is pretty much the same, but now we have a varying course which separates cases into three groups—(1) the acute; (2) the sub-acute; (3) the chronic.

In the acute, the onset symptoms are followed by the rapid

development of general peritonitis, which, without surgical relief, ends in death in from twelve to forty-eight hours.

In the sub-acute, after the shock of perforation has passed off, the symptoms are not marked for some hours or a day or two. Then, owing to further leakage from the stomach, or by the advance of what has for a time been a distinctly localised peritonitis, general septic peritonitis is set up, and without surgical relief, death follows in four or five days from the first seizure.

In the chronic, after the shock of perforation has passed off, as in the sub-acute cases, there is a period, more or less prolonged, in which symptoms are slight and doubt may arise in diagnosis. Then follow the general symptoms of pus formation and the local signs indicating a gas-containing cavity beneath the diaphragm. Following on these, are indications of septic invasion of the thorax, pleurisy, empyema, pneumonia or lung abscess.

Without relief by operation what is the prospect of recovery after perforation? Undoubtedly slight, almost hopeless, but not quite. There are cases recorded, the proof of which is complete; others in which, without absolute certainty, it is highly probable that gastric perforation has been followed by recovery. This fortunate result has been due in great measure to the fact that the stomach has been practically empty, food not having been taken for some time. In some cases the symptoms have pointed to a widespread peritonitis through which the patients have struggled. In others, the stomach contents have been localised and abscess set up, which has eventually found its way into stomach or bowel and so been evacuated, the patient emerging through a perilous illness and a long convalescence to recovery. A case of this kind I saw in consultation with Dr. Pickup and Dr. Haig, of Coventry, in 1893. A young lady had symptoms which pointed to possible leakage from a gastric ulcer. A localised swelling formed in the left hypochondrium, with fever. A large quantity of pus was partly vomited up and partly passed per anum almost simul-

taneously, and the swelling disappeared. Pleurisy developed on the left side, and some clear fluid was aspirated. The fever continued, the patient emaciated, and I was asked to see her to determine if any operative means were available for her relief. There was at this time no local focus to be felt in the abdomen, and no further collection in the chest; and a roving commission to explore the abdomen seemed more likely to do harm than good, so it was decided to leave the patient alone. Very slowly she began to improve; her temperature did not become normal until many months later, and convalescence was not complete until the end of eighteen months.

If cases of gastric perforation are left to medical treatment, it is probably no exaggeration to say that ninety-five per cent. die. What chance does surgery offer the patient? It is yet too early to speak of in percentages, but that it is better than can be obtained by medical means admits of no doubt, and I look confidently to still better results in the future. My tables contain all the cases of operation I have been able to collect. The total number of operations is thirty-seven, with thirteen recoveries. I do not think that, so far, one-third of the cases operated on have recovered, because, doubtless, unsuccessful cases have not been recorded; but these thirteen recoveries were so many patients almost certainly snatched from death, and give us every encouragement for the future.

A diagnosis of perforation of the stomach having been made, immediately after the accident a certain line of treatment must be followed, whether it is proposed to resort to operation or not. The collapse may be so intense as to cause death, and instances are on record of perforation of the stomach having been found to explain cases of sudden death. Collapse must be met by external warmth and by enemata of warm fluids and stimulants. Nothing should be given by the mouth if it can possibly be avoided, as it may lead to further extravasation or may cause vomiting, which in its turn squeezes the stomach contents through the perforation. The severe pain calls for morphia, which should be given hypodermically rather than by

the mouth. The patient should be kept in the horizontal position as completely as possible to prevent extravasated materials spreading widely from the point of perforation, where they may soon become localised by adhesions. If operation is declined, or for any reason is not deemed advisable, the patient should be kept rigidly in the horizontal position and food by the mouth withheld for several days, unless the patient's general condition imperatively demands it. Morphia should be given from time to time, partly to keep the patient quiet and free from pain, and to lessen peristaltic movements of the intestine. Examination of records of cases recovering without operation gives emphatic evidence of the value of absolute rectal feeding, morphia, and recumbency. Several cases could be recited in which relaxation of these precautions, owing to the patient's improved condition a day or two after perforation, has been followed by disaster.

If the diagnosis of perforation is clear and operation has been determined upon, sufficient delay to allow of recovery from collapse is not only justifiable but is called for in face of the fact that the operation may be prolonged and therefore severe. From an hour to an hour and a half has been frequently occupied in discovering and closing the perforation and in cleansing the peritoneal cavity; and in a very difficult but successful operation by Kriege (see Table I.) the duration of the operation was two hours and a half. With the varying conditions which may be found, it is evident that operation will not always proceed on the same lines.

If operation is undertaken soon after perforation, a vertical incision about four inches long, commencing a little way from the ribs either in the middle line or somewhat to the left of it, should first be made; the operator should not attempt to deal with the condition through a small opening, which will only embarrass him and delay progress. Through the incision the parts should be carefully examined to determine the amount of extravasation and the leaking point. It may at once be evident that the stomach contents, gas and semi-digested food, have

been widely disseminated, and that general peritonitis already exists. On the contrary, only healthy tissues may be seen, and, after careful sponge packing, the fingers pass upwards between the stomach and the liver to the common position for perforation, the anterior surface of the stomach. Here the material escaping from the stomach will generally be found; and before any search is made for the perforation, this material should be carefully cleaned away with sponges, not by irrigation. The presence of perforation having now been determined, if its position makes access to it difficult, there should be no hesitation in making a transverse incision to the left, to facilitate further manipulations. Or the same course may be taken to assist in finding the point of leakage. In seeking the hole in the stomach, the finger tip may at once easily detect it; if not, an indurated area must be felt for, the base of the ulcer, and this is especially useful if the ulcer is on the posterior surface of the stomach, when its thickened base may be felt through the anterior wall. If in neither of these ways can the perforation be found, an assistant should hold up the margin of the thorax with the liver, and, by the aid of a good light, the opening in the stomach looked for, when it may be recognised by fluid or bubbles of gas escaping from it. If the ulcer is felt on the posterior surface, it may be approached either through the gastro-hepatic, or through the great omentum, by carefully tearing through its tissue, avoiding the anastomosing vessels on either curvature of the stomach.

So far the perforation has been sought, the extravasated material removed and its diffusion prevented by sponge packing. The next step is to empty the stomach of its contents, which may be food, or a large quantity of gastric secretion. Either of these left in the stomach causes embarrassment during the closure of the perforation, and may give rise to distension of the organ and vomiting subsequently. It was possible in one of my cases to empty the fluid out by a tube passed into the perforation, but if this cannot be done, the œsophageal tube must be employed. The closure of the perforation next engages attention, and upon

this point the chief difference of opinion has risen between operators. The question at issue is whether the ulcer or the edge of the perforation should be formally excised or whether it is sufficient, after infolding the edges, to close the hole by sutures. Turning to the record of operations, Table I., in the eleven recoveries recorded it will be found that in eight of them the ulcer was not excised, but that the edges were infolded and sutures on Lembert's method applied. In two successful cases more or less complete excision of the ulcer was performed, and in one no attempt was made to close the perforation. It is evident therefore that excision is not a necessity for success. This is supported by the fact that healing of the perforation has taken place and the ulcer has cicatrised in several cases, mostly those of sub-phrenic abscess, in which either no attempt has been made at the time of operation to find the ulcer, or in which no operation has been performed. Again, in several cases in which suture alone has been done and death has subsequently occurred, the perforation has been found to be securely closed, death being caused by peritonitis, which pre-existed before the time of operation.

Apart from the evidence gained by the experience just recited, it is clear, from general considerations, that mere closure should be given the preference over excision, unless some very special condition is found calling for the latter. In some cases the ulcer is so difficult of access that its excision and suture would be impossible. This is so when the stomach is involved high up and near the lesser curvature, whether on the anterior or the posterior surface. Even if accessible, excision of the ulcer is a serious addition—it may be a very serious one—to the operation, performed on patients ill able to bear prolonged exposure on the operating table. The time consumed condemns the procedure; but there is further the very considerable loss of blood which has evidently occurred in more than one case. Finally, a gap of large extent may be left, which in one case required fourteen and in another thirty stitches for its closure. Suture by Lembert's method, without

excision, should therefore be adopted, and from one to half a dozen stitches may be required. In some cases these have been found to cut out rather easily; but as the edge and base of the ulcer are often much thickened, the sutures should be buried deeply in the outer coats of the stomach, and at a distance of as much as half an inch from the margin of the perforation if the tissues here seem firmer. All the stitches should be applied before any of them are tied, and they should be carried on each end well beyond the hole. By then drawing them all together, the strain is somewhat diminished on each of the earlier ones as they are tied, and as they are being secured, the edges should be carefully infolded by forceps or director. If it seems desirable, the first line of suturing may be reinforced by a second; and although this will still further encroach upon the stomach, in an organ of its capacity no harm is likely to result, unless the ulcer were situated at a narrow part like the pylorus.

It goes without saying that if these manipulations can be performed outside the abdomen by withdrawing a portion of the stomach through the wound, this would facilitate matters greatly. Unfortunately, this is generally not possible, and the operator has to rely upon the aid of assistants to retract widely the abdominal incision and to keep the liver raised up out of his way. If sutures will not hold, or the induration of the ulcer is so dense and widespread as to prevent closure by this means, excision may then be required. The vessels should be temporarily secured by forceps as they are divided, and the larger ones subsequently ligatured. One or more rows of Lembert's suturing are then required to securely close the gap produced. It has been found occasionally that neither closure by suture nor excision has been possible, and the perforation has been stitched to the abdominal incision, forming a gastric fistula. Under these circumstances, it is a question whether it would not be better to put a drainage-tube, tightly fitting the perforation, into the stomach to carry off any gastric secretion, and trust to gauze packing around to prevent further leaking into the peritoneal cavity.

Important as is the question of closing the perforation, that of irrigating the abdominal cavity is hardly second to it. Irrigation is a weapon powerful for harm as well as good. Whether it should be adopted must depend upon the extent to which the extravasated stomach contents have spread over the abdominal cavity. If they are well localised and it is evident that general peritonitis does not exist, irrigation may carry infection where it did not previously exist, and it should not be employed. In two successful cases, one by Kriege and the other by Bennett, see Table I., irrigation was not used, and sponges or gauze mops were used for purposes of cleansing. On the other hand, if, as is generally the case, extravasation is widespread, or general peritonitis exists, then upon the efficiency of the irrigation depends mainly the patient's chance of recovery. This should be carried out systematically and very thoroughly with plenty of fluid. One of the operator's hands should separate the coils of intestine to empty the pockets between them, the lumbar spaces should also receive attention and finally the pelvis. It is most difficult to get rid of all particles of food which lurk in these localities, and thorough irrigation is facilitated by a second opening above the pubes, so that a thorough flushing may be obtained. Drainage has been generally adopted in the successful cases, though not in all. In my opinion, a drain leading down to the seat of perforation should always be used; the risk of any harm it may do as a channel of subsequent infection from outside is slight as compared with the disaster which may occur from any further leakage at the point of suture, or from any inflammatory collection in the neighbourhood. I believe it would also give an additional chance of success if after general irrigation a second drain were inserted above the pubes, where fluid has such a great tendency to gravitate. The neglect of this precaution had I think something to do with the fatal result in one of my cases, No. 27, Table I., in which a quantity of turbid fluid was found *post mortem* in the pelvis.

In all these manipulations, which require some time for their

performance, the effect on the patient's strength must be carefully watched, for it is obviously no good to perform an ideal operation, to leave the perforation secure and the abdomen clean, if the patient is to be removed from the operating table moribund. On the other hand, a hasty scrambling operation, leaving food lying about in the belly cavity, and pockets of sero-purulent fluid unemptied, is certain to end in disaster, and tends to discredit operative interference. It should be the operator's business to secure efficient assistance, and to see that all he may require in the way of instruments, sutures, etc., is ready beforehand, so that no time may be wasted after the patient is anæsthetised. This is the more important as many operations for gastric perforation, if they are to have a chance of success, will have to be performed outside hospitals, sometimes because these are not available, and at others because transporting the patients from one place to another adds to their danger.

So far I have only discussed operation immediately after perforation, before any localised abscess has had time to develope. When there is a localised abscess, whether sub-phrenic or elsewhere, the course to be pursued is different from that already described. A question here arises whether after the diagnosis of perforation, operation should follow as soon as the patient's condition permits in all cases, or whether delay is sometimes advisable, in the hope that localised suppuration may form rather than immediate general peritonitis. In answering this question we must remember that we are perfectly in the dark as to where the point of perforation is located, and to what extent extravasation has occurred. Also that free extravasation of stomach contents is more common than localisation, and that the fate of patients with free extravasation depends upon the brevity of the time which intervenes between perforation and operation. With these facts before us there can only be agreement that delay in operation, with the hope of localised formation of matter, is not to be entertained.

If, however, abscess has formed, how is it to be approached?

The point of greatest importance is that it shall be opened by an incision as directly on to it as possible, so that no risk may be run of getting outside its boundaries and infecting the peritoneum. The incision should be made over the most prominent part of the presenting swelling, whether this be in the left or in the right hypochondrium or elsewhere. Foul pus and gas, with it may be stomach contents, will be evacuated. Some of the tissues forming the abscess wall may be recognisable, but others will not. This is not a matter of importance, as no search should be made for the perforation in the stomach. It probably would not be discovered; even if it were, its closure could not be effected, and, most important of all, the search for it might break through the limiting adhesions and give rise to general peritonitis. The abscess having been emptied, nothing more will be required in some cases than drainage. If, however, *an extensive sub-phrenic* collection exists, as is commonly the case, it is doubtful whether so simple a procedure is sufficient. A study of these abscesses shows that they prove very fatal from septicæmia, almost always after infecting the pleura and lung of the same side. This is so, even when the abscess has been drained from the front. Some additional measure is required, then, to save the patient. If empyema or abscess of the lung co-exists, there should be no hesitation in adopting the course presently to be laid down. If these complications are not present, such steps involve greater responsibility, but, in the interests of the patient, may be called for. To get at the most dependent part of these collections and drain them efficiently, an opening is required through the wall of the thorax. This is best made in the mid-axillary line on the left side, and two to three inches of the eighth rib should be removed. The lung retracts out of the way, and the diaphragm is exposed. Higher up or more posterior than this it is not safe to go. If empyema exists or lung abscess, these can be now dealt with as seems best. If they are not present, the diaphragm should be stitched with a ring of sutures to the edges of the wound in the parietal pleura, and either opened at once or, better still, packed and

left until the next day to secure adhesions between the pleural surfaces. On making an opening in the diaphragm, the finger passes into the left sub-phrenic space just in front of the anterior margin and to the left of the spleen, and a drain should be placed *in situ*. A finger passed into the abdominal incision should guide the operator as to the place at which the opening in the diaphragm should be made, so as to get as completely as possible to the bottom of the collection and yet with safety to the spleen.

It may be urged that this procedure incurs risk of inducing the very thing we wish to avoid—viz., infection of the thorax; but a study of sub-phrenic abscess shows that the opening of the abscess from the front is not sufficient for its cure, and that, despite evacuation by abdominal incision, the pleura or lung nearly always becomes involved.

The record of operations contained in the tables I have collected shows thirteen recoveries. It will not unnaturally be asked, What is the value of these lives? Have they temporarily recovered to become victims to a later perforation; or, if still living, are they well enough to lead useful lives? I have enquired of the various operators, and have to thank them for their courteous replies, an excerpt from which is appended to several of the successful cases. The record is, I think you will agree with me, a very satisfactory one. Of ten recoveries of which I have been able to obtain recent news, all remained well at intervals of from six weeks to three years after operation, and at least as well able to work as they were before perforation, and some of them much better able to do so.

In concluding my lecture on this subject, I wish to urge upon the profession the necessity for early diagnosis and treatment of this terribly fatal accident, gastric perforation. If a surgeon performing an operation within the abdominal cavity accidentally opens an organ, as for instance the bladder or intestine, he carefully cleans away any material which may have extravasated, closes the rent he has made, and feels confident that little harm will happen from the mischance. We may argue from this that

gastric perforations under the same condition of *immediate* treatment would give much better results than hitherto. We cannot of course attain to *immediate* treatment for various reasons, but the more nearly we approximate to it the better, always provided that we allow the primary shock to be recovered from. The influence of early operation is shown by the following figures (see Table I.) :—In nine operations performed with success, the average time which intervened between perforation and operation was $7\frac{1}{3}$ hours ; the longest being 10 hours, and the shortest 3 hours. In fifteen unsuccessful operations, the average time intervening between perforation and operation was 27 hours ; the shortest was 4 hours, and the longest 70 hours. The time of operation is really the dominant factor of success. Unless surgery has an opportunity within the first six or nine hours after perforation, the mortality must remain great. Given the opportunity for intervention as soon as the primary collapse has passed off, I believe the results will improve very much.

TABLE I.—EARLY OPERATIONS.

NO. SEX. AGE.	PREVIOUS HISTORY.	EARLIEST SYMPTOMS.	TIME OF OPERATION.	CONDITIONS FOUND.	NATURE OF OPERATION.	RESULT.	OPERATOR AND REFERENCE.
1 F. 22	Indigestion.	Severe abdominal pain and rapid distension. No vomiting.	26 hours after.	Anterior perforation midway betwn. orifices.	Edge not excised. Purse-string suture, as Lembert's would not hold.	Death in 6 hours	Sterling. <i>Australian M. J.</i> , June 15, 1893.
2 F. 29	Gastric ulcer several years.	Sudden agonizing pain above and to left of umbilicus. Vomiting.	8 hours after.	Anterior perforation about middle.	Edge of ulcer excised. Lembert's suture, irrigation, drainage.	Recovery. Discharge of pus per rectum on 18th day.	Gilford. <i>Lancet</i> , June 2, 1894.
3 F. 23	Indigestion, but not special gastric ulcer.	Sudden violent abdominal pain and collapse.	18 hours after.	Perforation lesser curvature, near cardiac end.	Ulcer stitched to abdominal wall as it could not be excised or sutured.	Death 8th day.	Maurice. <i>Lancet</i> , vol. i., 1894, p. 1373.
4 F. 25	Indigestion.	Sharp pain in left hypochondrium spreading to right of abdomen.	45 hours after.	Anterior perforation 2 inches below lesser curvature, midway between orifices.	Edge of ulcer scraped, Lembert's suture, irrigated, not drained.	Death in 34 hrs. after operation.	Page. <i>Lancet</i> , March 24, 1894.
5 F. 16	Indigestion.	Acute pain in left hypochondrium, & faintness.	24 hours after.	Anterior perforation close to lesser curvature and $2\frac{1}{2}$ inches from cardiac end.	Lembert's suture, no irrigation or drainage. Ulcer could not have been excised.	Death in 14 hrs.	Page. <i>Lancet</i> , March 24, 1894.
6 F. 20	Gastric ulcer.	Very severe abdominal pain, faintness, and vomiting.	5 hours after.	Anterior perforation close to cardiac orifice.	Lembert's suture. Ulcer not excised. Irrigated, not drained.	Recovery. Subsequent good health. Well April 10, 1895.	Morse. <i>Lancet</i> , March 17, 1894.

NO. SEX. AGE.	PREVIOUS HISTORY.	EARLIEST SYMPTOMS.	TIME OF OPERATION.	CONDITIONS FOUND.	NATURE OF OPERATION.	RESULT.	OPERATOR AND REFERENCE.
7 F. 41	Indigestion.	Violent pain across umbilicus, and faintness.	8½ hours later.	Posterior perforation 2½ ins. from pylorus.	Closed by single suture reinforced by 2 rows of Lembert's. No irrigation or drainage.	Recovery. Was well 9 months later.	Bennett. <i>Lancet</i> , vol. ii., '94, p. 21.
8 F. 26	Gastric ulcer.	Sudden acute pain referred mainly to chest	20 hours after.	Perforation at cardiac end, close to posterior surface.	Ulcer excised, closed by 30 sutures, free & oozing. Irrigation, drainage.	Death in 12 hrs.	Swain. <i>Lancet</i> , July, 7, 1894.
9 F. 22	Not typical of gastric ulcer.	Sudden pain left side of abdomen.	61 hours after.	Anterior perforation 1¾ inch below cardiac orifice.	Sutured, irrigated, drained from pelvis.	Death in 48 hrs.	Eve. <i>Lancet</i> , Nov. 10, 1894.
10 F. 20	History of Indigestion.	Sudden intense abdominal pain with collapse.	9 hours after.	Perforation at cardiac end, rather on the posterior surface.	Suture of ulcer without excision, drainage. Secondary operation to close abdominal wound.	Death 31st day from septicaemia.	Gilford. <i>B. M. J.</i> , May 6, 1893.
11 F. 26	Gastric ulcer but no hæmatemesis.	Sudden pain with collapse and vomiting.	Next day.	Perforation at cardiac end on posterior surface.	Ulcer could not be excised or sutured, was stitched to abdominal wall.	Death at end of six weeks, from abscess of left lung and empyema.	Haward. <i>B. M. J.</i> , May 6, 1893.
12 M. 44	No history of stomach trouble	Severe abdominal pain and vomiting.	9 hours after,	Posterior perforation near lesser curvature.	Suture of ulcer, irrigation, drainage.	Death in 16 hrs.	Stable. <i>St. Thos. Rep.</i> , vol. xxvi., p. 186.
13 F. 20	Dyspepsia.	Sudden acute pain below left ribs, with faintness.	24 hours later.	Perforation of anterior surface	Closed by two crossed sutures. Irrigation, drainage above pubes.	Death 14 hours later.	Anson. <i>Lancet</i> , vol. i., 1893, p. 469.

14	F.	23	—	—	Anterior perforation near greater curvature, midway between ends. Anterior perforation.	Ulcer closed, 2 rows of sutures, irrigated.	Death 3 days later.	Maclaren. <i>B. M. J.</i> , vol. ii., 1894, p. 862.
15	F.	14	Dyspepsia.	Sudden pain with collapse.		Ulcer closed by 2 rows of sutures.	Recovery. Remains quite well Apl. 12th, 1895.	<i>Ibid.</i>
16	F.	20	—	Sudden acute abdominal pain.	Anterior perforation.	Ulcer closed by 3 rows of sutures.	Death 58 hours after. (Peritonitis, stomach contents still in abdomen).	<i>Ibid.</i>
17	F.	32	—	Acute pain in epigastrium with collapse.	Anterior perforation at upper part.	Ulcer closed, Lembert's suture, not excised. Irrigated, drained above pubes.	Recovery. Is now well, Apl. 11th, 1895.	Nicholson. <i>B. M. J.</i> , vol. ii., 1894, p. 983.
18	F.	17	Gastric ulcer.	Sudden acute pain at pit of stomach and under left breast.	Anterior perforation near lesser curvature, close to cardiac end.	Ulcer closed, Lembert's suture, not excised. Irrigation, drainage.	Death 45 hours after.	Haslam. <i>B. M. J.</i> , vol. ii., 1893.
19	F.	21	Nothing characteristic.	Sudden violent abdominal pain and vomiting.	General peritonitis. Stomach not examined.		Death 8 hours after. Anterior perforation of stomach found.	Parsons. <i>Dublin J. Med. Sci.</i> , 1892, p. 27.
20	F.	—	Indigestion.	Violent pain in left hypochondrium followed by collapse.	Anterior perforation, close to lesser curvature and oesophagus	Ulcer could not be sutured or excised, therefore stitched to abdominal incision.	Death six days later.	<i>Ibid.</i>

NO.	SEX.	AGE.	PREVIOUS HISTORY.	EARLIEST SYMPTOMS.	TIME OF OPERATION.	CONDITIONS FOUND.	NATURE OF OPERATION.	RESULT.	OPERATOR AND REFERENCE.
21	F.	—	Indigestion.	Severe abdominal pain, faintness.	10 hours after.	Anterior perforation.	Suture of ulcer. Irrigation.	Recovery. April 12th, 1895, in better health than for a long time.	Lundie. <i>B. M. J.</i> , Jan. 26th, 1895.
22	F.	24	Gastric Ulcer.	Violent pain in abdomen, vomiting.	6 hours after.	Posterior perforation high up towards cardiac end.	Ulcer excised, gap closed with 14 sutures. Irrigated, not drained.	Recovery. Remains well at date, April 11, 1895.	Jowers. <i>Brighton Med. Soc.</i> , Dec. 6th, 1894.
23	M.	41	Gastric Ulcer.	Severe pain in region of stomach, followed by collapse.	About 8 hours after.	Anterior perforation close to diaphragm.	Ulcer sutured. Drainage.	Recovery. Remains well at date, April 18, 1895.	Kriege. <i>Klin. Wochenschrift</i> , Dec., 1892.
24	M	55	Impossible to obtain.	Uncertain.	Probably some days after perforation.	General peritonitis.	Incision and emptying of small intestine. Drainage of abdomen.	Death 22 hours after operation. <i>P. M.</i> , anterior perforation found.	Bowlby. Unrecorded.
25	F.	16	Gastric ulcer.	Violent pain left side of abdomen and vomiting later.	24 hours after.	General peritonitis. Stomach not examined.	Irrigation and drainage.	Death 2 months after operation, from empyema and abscess in lung. <i>P. M.</i> , anterior perforation found.	Taylor. <i>B'ham. Med. Rev.</i> , vol. 23.
26	F.	22	Nothing pointing to stomach.	Severe pain in abdomen.	6 hours after.	General peritonitis. Stomach not examined.	Median incision below umbilicus. Irrigation, drainage.	Death 24 hours after. <i>P. M.</i> , anterior perforation of stomach.	Barling. <i>B. M. J.</i> , June 17th 1893.
27	F.	20	Gastric ulcer.	Sudden severe pain left upper part of abdomen. Vomiting.	3 days later.	General peritonitis, anterior perforation near lesser curvature.	Suture of ulcer. Irrigation, drainage.	Death 30 hours later.	Barling. <i>Ibid.</i>

28	F.	31	Gastric ulcer.	Violent pain in upper part of abdomen. Col-lapse.	9 hours later.	Perforation at cardiac end of lesser curvature	Ulcer sutured. Gastrostomy with glass tube also performed to prevent tension.	Recovery. Was well on April 12, 1895, four months after operation.	Paul. <i>B. M. J.</i> , April 6, 1895.
29	F.	15	Gastric disturbance for four months.	Intense pain in abdomen and vomiting.	—	Perforation on anterior wall of stomach near lesser curvature	Closed by a double row of Lembert's suture.	Abdomen was open'd a second time at end of 13 days' symptoms suggesting another perforation; none found. Recovery.	Dunn. <i>B. M. J.</i> , May 18, 1895, at Clinical Society.
30	F.	—	—	—	Few hours after perforation.	Small anterior perforation.	Edge of ulcer excised, closed by Lembert's suture.	Death from septicæmia 15th day. Left sub-phrenic abscess found.	Silcock. <i>Ibid.</i>
31	F.	24	Gastric ulcer.	—	—	Adhesions between left lobe of liver and stomach, and perforation in midst of these.	No attempt at suturing ulcer for fear of disturbing adhesions. Drainage tube placed down to the perforation.	Recovery.	Silcock.

TABLE II.—LATE OPERATION FOR LOCALISED COLLECTION SUCH AS SUB-PHRENIC ABSCESS.

NO. SEX. AGE.	PREVIOUS HISTORY.	EARLIEST SYMPTOMS.	TIME OF OPERATION.	CONDITIONS FOUND.	NATURE OF OPERATION.	RESULT.	OPERATOR AND REFERENCE.
1 F. 25	—	Severe pain in epigastrium & sharp pain left side of chest.	8 days after.	Sub-phrenic pneumo-thorax Collection of pus beneath left arch of diaphragm.	Washed drained, ulcer not found.	Recovery in 9 weeks. Well 15 months later	Bennett. <i>Lancet</i> , Nov. 17, 1894.
2 F. 21	Indigestion.	Sudden severe pain left side of abdomen.	9 days after.	Sub-phrenic abscess, left side.	Drainage.	Death next day. Anterior perforation found & left pleurisy.	Hayward. <i>Tr. Clin. Soc.</i> , vol. xxvi., Case 8. Penrose and Dickenson.
3 F. 21	Dyspepsia.	—	14 days after.	Left sub-phrenic abscess.	Drainage.	Death 44th day. Healed anterior perforation found and abscess of left lung.	Pick. <i>Tr. Clin. Soc.</i> , vol. xxvi., Case 9. Penrose and Dickenson.
4 M. 40	Dyspepsia.	Sudden severe pain left upper abdomen. Collapse.	4 days after.	Left sub-phrenic abscess.	Drainage.	Death two days later. Posterior perforation found, empyema left side.	Turner. <i>Tr. Clin. Soc.</i> , vol. xxvi., Case 10. Penrose and Dickenson.
5 F. 25	Gastric ulcer.	Sudden violent pain in epigastrium, and faintness.	35th day.	Sub-phrenic abscess, perforation in diaphragm, empyema.	Resection of 8th rib, drainage through diaphragm.	Death 4 months after perforation. <i>P. M.</i> , cicatrised gastric ulcer, abscess of lung.	Morgan. <i>Lancet</i> , vol. ii., 1893.
6 F. 29	Gastric ulcer suspected.	Acute pain in abdomen, worst in left hypochondrium. Faintness.	21st day.	Abscess in left hypochondrium.	Incision and drainage.	Recovery. Is now well, three years after.	Barling. <i>B. M. J.</i> , June 17th, 1893.

PERFORATION OF THE DUODENUM.

In a study of gastric perforation it is not possible to ignore perforation of duodenal ulcer, the symptoms of the latter accident are so similar to the former. It is well recognised that the duodenum, and especially its first portion, is liable to become the seat of a simple round ulcer, which may give rise to symptoms or which may be entirely latent. This ulcer is commonly found within two inches of the pylorus; may be situated on any portion of the calibre of the gut, though generally on the anterior wall, and in this situation is unsupported by adhesion; whilst if on the posterior surface it generally becomes adherent, and so protected from perforation. The size of the ulcer varies, but its base is rarely more than three-quarters of an inch in diameter, and is generally less than this.

If its presence is marked by symptoms, they are generally much those of gastric ulcer with these differences—that the pain is more apt to be to the right of the middle line than to the left, and it comes on some two hours or more after food has been taken, and when the partly digested food is finding its way through the pylorus. Hæmorrhage from the ulcer is more likely to be passed per anum than to be vomited. More commonly in the duodenum than in the stomach, there are no symptoms of the ulcer; it is quite latent until the accident of hæmorrhage or perforation occurs.

I know of no statistics which tell the frequency of ulcer of the duodenum; certainly it is not nearly as common as is ulcer of the stomach. Nor can I say whether a considerable number of such ulcers perforate; but my impression is that they do. The *post mortem* records of the General Hospital for the last twenty-two years contain reports of nine cases of duodenal ulcer; one of these, secondary to burns in a young child, we may ignore. Of the remaining eight, in six death was caused by perforation, one died of hæmorrhage, and one apparently of interference with nutrition. The age and sex of the subjects of duodenal ulcer are worthy of attention, because they assist in differentiating between gastric and duodenal ulcer. Of the

eight cases alluded to, six were males and two females, whilst the ages varied from 50 to 19, the average being 31.

Perforation of duodenal ulcer, as a rule, takes place freely into the peritoneal cavity, setting up a rapid widespread peritonitis, there being neither limiting adhesions nor a well-defined space, such as the sub-phrenic, in which extravasated food may for a time remain localised. Occasionally, however, as in a case recorded by West (*B. M. J.*, April 8th, 1893), a localised abscess may form, which, in his case, burst into the transverse colon. In the only case in which I have operated, an extensive retro-peritoneal abscess existed, into which a large posterior duodenal ulcer opened. This collection had existed for some time, and peritonitis had been set up by extension through the tissues, not by direct perforation.

The symptoms of perforation are quite as marked as in the case of stomach ulcer. There is severe or intense abdominal pain, often with faintness and in some cases vomiting. As a rule, the pain at the time of the seizure is not localised to any particular part of the abdomen, though it may be felt in the epigastrium or in the right hypochondrium. As the collapse subsides, the phenomena of advancing general peritonitis arise, distension of the abdomen, quick pulse, persistent vomiting, complete obstruction of the bowels, the Hippocratic face; and death occurs in from twelve to seventy-two hours.

It will be evident that a diagnosis between perforation of the stomach and of the duodenum is not often possible. Guided by the age of the patient, by the sex, by the previous history pointing to duodenal ulcer, and by the absence of localised pain at the time of perforation, a shrewd suspicion may be formed that the point of perforation is in the duodenum rather than in the stomach, but further than this it is hardly possible to go. Fortunately, a differential diagnosis is not of importance, as the main lines of treatment are the same whichever viscus is the seat of the lesion. Without denying the possibility of spontaneous recovery after duodenal perforation, the conditions make it clear that recovery is exceedingly rare, and that surgical treatment alone offers any real chance of recovery.

The general treatment should be on the lines laid down for gastric perforation: the shock should be combated and the stomach kept empty. When the shock has passed off, the abdomen should be opened by a four-inch incision in the middle line, a transverse incision to the right being added if necessary to cope with the perforation. If there are reasons for suspecting the duodenum as the seat of perforation, search would naturally be made here first; but very often the stomach will be first examined, because of the greater frequency of perforation here. When examination of the stomach has failed to discover the leaking point, then the duodenum will receive attention. A perforation in the duodenum having been discovered, how should it be dealt with? Either by suture only on Lembert's method, by excision of the margin of the perforation and subsequent suture, or merely by drainage. Operations for this condition have been so few that we cannot appeal to them for guidance. The only case which has ended successfully is one recorded by Dean (*Tr. Med. Soc.*, Vol. 17), and in that the edge of the ulcer was excised, the opening being subsequently closed by Lembert's suture. It is evident that to excision there are two objections—the extra time required, and the narrowing of the gut from encroachment on its walls. For these reasons I should attempt closure by Lembert's suture only; but I confess we still have to make our experience in this matter. If there is a localised abscess, this should be drained only, and no search made for the perforation. With regard to the use of irrigation and similar details, what has been said on the treatment of gastric perforation applies here.

SOME REMARKS ON COLOTOMY.

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Few subjects have been more frequently discussed by surgeons than the indications and mode of performance of the operation of colotomy. In spite of this fact, there still exists great diversity both of opinion and practice; and the recent progress of intestinal surgery has necessitated a reconsideration of the subject from several points of view. I propose, therefore, to review some past phases of opinion on the subject, and to indicate certain modifications of practice to which we are now tending.

Colotomy was first proposed by Littre, in 1710, as a palliative operation for the relief of obstruction of the colon; and this surgeon suggested the sigmoid flexure in the left iliac region as the most convenient situation for the artificial anus. It is obvious that this situation is only applicable to obstructions of the colon below the sigmoid flexure; and, as a matter of fact, the first colotomy actually carried out was done not on the sigmoid flexure, but on the cæcum, by Pillore (of Rouen), in 1776; and the second, on the transverse colon, by Fine (of Geneva), in 1797. In pre-antiseptic times, however, either of these operations exposed the patient to the grave risks of opening the peritoneal cavity. Consequently, colotomy was little practised until the retro-peritoneal opening in the left loin, proposed by Callisen (of Copenhagen), in 1776, was practically established by Amussat, in 1839. The advantages of this procedure were so great that the earlier operations of Littre and Pillore were almost abandoned till the introduction of antiseptic surgery in our own times. The safety of opening the abdomen having then been established, and the risk of intra-peritoneal leakage of fæces having been obviated by operating in two stages, Littre's iliac operation again came into favour,

and was extensively practised, owing to the extreme ease and safety with which it could be performed. For the same reasons, the operation came to be extensively performed not only for obstruction, but for the relief of cancerous or other intractable ulceration of the rectum. The lumbar operation, however, still possessed the advantage, in cases of complete obstruction, of allowing the bowel to be opened at once, without risk of soiling the peritoneum with fæces. Consequently, it continued to be largely practised for such cases; while the iliac operation was more generally preferred in cases in which it was possible to delay the opening of the bowel until a few days after its fixation in the parietal wound.

The next step in advance was the recognition of the impossibility, in many cases, of locating precisely the position of the obstruction. The argument made use of by the older surgeons, and still acted on by many, was that the history, symptoms, and physical examination of the abdomen, in cases of chronic intestinal obstruction, enabled the surgeon, in most cases, to say with confidence when the obstruction was in the colon, and to guess pretty accurately its nature. It was asserted, quite correctly, that experience proved, in the vast majority of such cases (excluding obvious congenital malformation), that the obstruction was caused by cancerous stricture. Statistics were then brought forward to prove that the majority of such strictures were situated below the descending colon, and that the obstruction would consequently be probably relieved by left lumbar colotomy. On these grounds, this operation was practised as a routine procedure in almost every case of chronic intestinal obstruction. Few modern surgeons would act on such an assumption.

I have notes of seven cases which came under my own observation in which the clinical features pointed clearly to obstruction in the colon, but in which there was no precise evidence of the exact situation of the obstruction—that is, in which no growth or stricture could be felt either per rectum or by abdominal palpation. All these cases proved, in fact, to be

cases of malignant stricture of the colon, but in two only was the stricture below the descending colon. Of the remaining five, the stricture was situated in one case in the splenic flexure, in two cases in the transverse colon, and in two in the ascending colon. Consequently, if left lumbar colotomy had been performed in all these cases according to the old rule, acting merely on the assumption of the relatively greater frequency of malignant stricture in the lower part of the colon, the artificial anus would have been below the obstruction in five cases out of seven. As a matter of fact, left lumbar colotomy without previous laparotomy was performed in two of these cases, and in one of them the opening was afterwards found to be below the obstruction it was intended to relieve. In a third case a left iliac colotomy, completed without previous search for the stricture, was also found to be below the obstruction. Now-a-days, therefore, it may be asserted, without fear of contradiction, that colotomy should never be performed without previous precise location of the obstruction. Excluding strictures of the rectum within reach of the fingers, it is seldom that this localisation can be made out with any degree of certainty without opening the abdomen. It is true that in a minority of cases a definite lump can be felt by abdominal palpation at the site of the obstruction, or visible distension of the colon may cease abruptly at the same point; but it is seldom that a confident diagnosis can be made on those grounds.

The form of cancerous disease of the colon which most frequently leads to obstruction is the tight annular stricture in which the presence of a new growth can often only be demonstrated by the microscope. Consequently it is rarely palpable through the abdominal wall, and is sometimes hard to find even when the abdomen is open. For these reasons it is obvious that left lumbar colotomy is only applicable in cases in which the exact situation of the stricture is previously known. In all other cases a preliminary laparotomy is essential. In cases in which the nature and position of the obstruction are entirely obscure, the ordinary median hypogastric incision is of course to

be preferred. In cases in which the clinical features point clearly to the colon as the site of obstruction the median wound presents certain disadvantages. In the male subject it is not always easy or even possible to examine every part of the colon through a median incision. By passing the whole hand into the abdomen every part of the colon may indeed be felt, but when the small intestines are distended it is not always possible even to decide whether every part of the colon is empty or full. In fact under these circumstances it is only possible to examine thoroughly those parts of the colon which can be brought up into the wound and inspected. By a number of trials on the cadaver I have found that the sigmoid flexure can always be inspected in this way, and the whole rectum can of course be thoroughly examined in the pelvis. It is generally possible also with some trouble to bring the cæcum into a median hypogastric wound for examination, and by extending the incision to the umbilicus the central portion of the transverse colon can be similarly inspected, though not in all cases. In many cases the meso-cæcum is so short that it is impossible to bring it up into a median incision. In the female the same parts can be examined with somewhat greater facility. I am sure, however, that an annular stricture in the more fixed parts of the colon, especially in the hepatic or splenic flexures, might be entirely overlooked by the most careful search through the median hypogastric wound. On the other hand, the oblique lateral incision used for iliac colotomy not only allows the rectum, sigmoid flexure, and descending colon to be thoroughly examined, but suffices also for making the colotomy should the obstruction prove to be in or below the sigmoid. Should the latter however be found empty, and therefore obviously below the obstruction, a second incision can be made over the cæcum and the colotomy be made there. And whereas a preliminary median incision followed by colotomy almost always requires a second incision directly over the part of the bowel which is opened, the right iliac incision will in many cases not require a second.

The number of incisions is in reality a matter of small conse-

quence if they are not too large. The important point is that the point of obstruction should be not merely found, but inspected. For this reason, I think it would be better, if a small median incision failed to reveal the stricture, to cut directly down successively on the ascending, transverse, and descending colon by separate small incisions, rather than persevere with prolonged and difficult manipulations through the median wound.

This brings me to another point in the evolution of surgical opinion with regard to colotomy. Formerly, the exact location of the stricture was of secondary consequence so long as the colotomy was above it. That is to say, the stricture, being almost always malignant, was regarded as incurable, and colotomy was intended, in all cases, as a permanent and final measure of palliation. To-day, the question of re-section of the stricture has to be considered; and, for this reason, it is of the utmost importance, in every case, to ascertain what chances there are of doing this before making an artificial anus. If the disease is clearly irremovable, the only considerations to be taken into account, in making the artificial anus, are those bearing on the subsequent comfort and convenience of the patient during the brief remains of life. In this connection it may be remarked that even as a palliative for incurable cases of stricture, colotomy will, in the future, have to be weighed against the newer surgical expedient of short circuiting the obstruction by intestinal anastomosis, which obviates the unpleasantness of an external artificial anus. This procedure, however, will probably be difficult to carry out when the obstruction has become acute and needs speedy relief; under these circumstances, colotomy will probably continue to be practised.

Even if an exploratory laparotomy discovers conditions favourable for the resection of the stricture, colotomy may still be required as a preliminary or supplementary measure, in order to give immediate relief in cases of complete obstruction. It is true that resection and immediate re-union of the

colon by Murphy's button has been successfully carried out recently in the presence of sub-acute obstruction, but I believe it would be rarely safe to attempt this procedure during an attack of complete obstruction with much accumulation of fæces.

Under these circumstances two courses are open ; either to resect the stricture and then stitch the divided ends into the wound so as to form an artificial anus, which after the relief of the distension can be closed by a second operation ; or to place a temporary artificial anus in the cæcum and to resect the stricture itself at a later time when the conditions will allow of immediate reunion of the divided gut. Of these two courses I regard the second as by far the best. The restoration of the continuity of the bowel after the divided ends have been implanted in the abdominal wall, presents great difficulties owing to the adhesions and to the septic condition of the skin around the artificial anus which lies within the immediate field of operation. In this case it is true that the same operation which restores the continuity of the bowel also cures the artificial anus. On the other hand, when the temporary colotomy is placed in the cæcum, a resection of any part of the colon below it can be carried out during complete rest of the newly-united bowel as regards the passage of fæces, and this is certainly a great additional security.

If colotomy is intended merely as a temporary or preliminary measure, it is important to avoid two things which are necessary for making a satisfactory permanent colotomy. In the first place, no attempt should be made to form a mesenteric spur by fixing a complete knuckle of intestine outside the abdomen ; in the second place, the bowel should be sutured to the peritoneum only, and not to the skin or raw surface of the wound, for, as Mr. Greig Smith has shown, this leads to very dense adhesions. Both these conditions, but especially the formation of a spur, render the subsequent closure of the artificial anus a matter of difficulty. When a colotomy is intended to be temporary, it should be made as nearly as possible a simple fæcal

fistula in the cæcum; and, for this purpose, the simplest method is to tie in one of the smaller tubes introduced by Paul (of Liverpool), and then to return the cæcum completely within the abdomen, merely keeping it in contact with the abdominal wall by the traction of the tube, aided, perhaps, by one or two peritoneal sutures. I have found the use of Paul's tubes a very simple and efficient means of completing a colotomy or enterostomy, and one which enables the abdominal wound to be treated aseptically, while permitting the immediate evacuation of the bowel. The introduction of this simple device must be regarded as one of the greatest improvements in the technique not merely of colotomy, but of all operations requiring evacuation or drainage of any part of the alimentary tract.

REPORTS OF CASES.

RUPTURE OF THE HEART.

BY GUTHRIE RANKIN, M.D. GLASG., F.R.C.P. EDIN.

Cases of spontaneous rupture of the heart are not common, and often present, when they occur, such difficulties in diagnosis that it is well-nigh impossible to differentiate them from other pathological conditions whose symptoms during life they may closely resemble. Most cases, it is true, die so suddenly that the question of diagnosis never arises, but there are others, such as that to which these notes refer, which linger on for hours or days or even longer, and which are exceedingly perplexing in their anomalous manifestations. A rent in the cardiac wall from causes within the heart itself never can occur when the tissue is perfectly healthy, the normal resisting power being sufficient to outbalance any ordinary force to which it may be exposed; but, even with a degenerate wall, there is generally a history of some unusual exertion to account for the sudden seizure. In this case there was no such record. The patient

was a ruddy, robust, healthy-looking woman of 54 years of age, and during her whole life she had enjoyed such excellent health that she had not, within her recollection, requisitioned the services of a medical man. Her brother owned a small farm, in the active work of which she took a leading part. She was energetic to a degree, and had been always accustomed, as she herself expressed it, "to work from morning till night." Her family history was satisfactory, many relatives of the immediately preceding generation, including her mother, having lived beyond 90. Though not actually laid aside, her friends thought she had not been quite as vigorous as usual for the past two years, and they remarked that she at times had complained of sudden and severe headaches, from which she only got relief by lying down for an hour or two.

Two days before the commencement of her present illness she observed that stooping caused pain in her chest, and, to allay it, she applied before going to bed a linseed poultice, with the result that she slept comfortably the night through. Next day, though well in the morning, the pain gradually returned and became so bad, that she went back to bed during the afternoon, and resumed the poultices. Relief followed, and again she had an undisturbed night, but the following morning she woke to find the pain still in her chest, and of such degree as to make her desire to lie still. With an effort, however, she got about and assisted in the milking of a large dairy, every now and again being obliged to desist from her work because of increase in the pain, which had evidently now become paroxysmal. Early in the afternoon the pain had increased, and had become so continuous, that it was impossible for her to keep about, and she consented, unwillingly, to again take to her bed. I first saw her that evening, and at the time of my visit, she was fairly comfortable. In ordinary health she had a florid complexion, but it now looked duskier than normal, and her breathing was short and rapid. Her pulse was soft and numbered 100; it was regular and equal at both wrists. Her tongue was thickly coated with a foul yellow fur, and her breath was most offensive. She

had vomited several times since coming to bed. Of late she had suffered unusually from constipation, the bowels now not having been relieved for three days. There was no general tenderness over the abdomen, but the liver-dulness was increased to a distance of two inches below the costal arch, and there was pain on pressure along the edge of its enlarged border. The temperature registered $99^{\circ}4'$. The urine contained a haze of albumen, and copious urates, but was otherwise healthy. The lungs were normal except behind, where, over both bases, slight crepitation could be heard on deep inspiration; there was no percussion-dulness. The heart was increased in all its diameters; its impulse was feeble and diffuse, but the sounds, though wanting in definition, were without the complication of valvular bruit. There was no tenderness to touch over the thoracic region, but pressure over the enlarged liver caused radiating pain over the whole thorax and induced a sensation of deathly sickness. Immediately before getting into bed she had complained of faintness, but since the application of the poultices this had entirely disappeared.

An effervescing saline mixture, with repeated small doses of calomel, and continual hot fomentations over the liver-region was advised, and the dietary was restricted to milk and clear soup. Next morning, in answer to a hurried summons, I found her sitting upright in bed, gasping for breath, and apparently threatened with imminent suffocation. Her colour was livid, the pain within her chest was agonising, perspiration stood in beads on her forehead, her hands and feet were clammy and cold, and not the faintest flicker of a pulse could be felt at either wrist. The liver condition remained very much as on the previous evening, but there was now extensive increase in the transverse cardiac dulness, the sounds were muffled and irregular in rhythm; but no murmur or friction sound could be detected.

She was freely stimulated, and a mixture of camphor, digitalis and ether in full doses was substituted for the previous medicine. In the afternoon the patient had rallied considerably. She was now able to recline comfortably half supported by

pillows, the breathing was easier, the complexion had resumed its normal hue, the pulse had returned to the wrists, and the præcordial pain was greatly diminished. There was no difference in the area of cardiac dulness, but the sounds were more clear and vigorous. A friction-murmur could now be distinctly heard in the region of the nipple. This condition of improvement continued throughout the remainder of that day, and next morning she was still comfortable and had passed a tolerably good night. The friction-murmur had disappeared, but the heart-sounds were clearly audible, and the pulse, which was now quiet and regular, did not exceed 80. Once in the course of that day she experienced a return of the dyspnoea and pain, not nearly so severe as on the first occasion, but still bad enough to cause such a change in her appearance as attracted the attention of her friends. The attack came on suddenly and without warning, but in about an hour's time gradually subsided.

Another good night's rest was followed by a comfortable morning, but there was greater complaint of thoracic pain, and both respiration and pulse were accelerated. Friction could again be heard more extensively than before, but the heart-sounds were still clear. A fly-blister was applied over the præcordial area, with the result, after a few hours, of entirely relieving the pain; the breathing became quiet, and the patient felt herself more comfortable generally than at any time since the beginning of her illness. This improvement continued for the next twenty-four hours, with only one interruption during the night, when there was a return of all the distressing symptoms; these lasted for about an hour and again gradually disappeared.

On examination at the next forenoon visit, the cardiac rhythm was found irregular, the heart-sounds were indistinct, and the pulse was very feeble and fluttering. Otherwise the conditions remained unchanged, and the patient expressed herself as no worse, and was certainly free from pain. That day passed comfortably, as did likewise the succeeding night; but at seven

next morning, after swallowing a cup of tea, she suddenly started up in bed and fell back dead before her attendant could reach her.

Only a limited *post mortem* examination was allowed, and the heart was the sole organ which was disturbed. The liver, as seen *in situ*, was greatly enlarged; its surface was smooth, and there were no adhesions to neighbouring parts. The pericardial sac was distended, and, on opening into it, was found to contain a large quantity of red-stained fluid and about a teacupful of blood clot. The heart was enlarged throughout, and there was specially marked hypertrophy of the walls of the left ventricle, along the free margin of which there was a rent of about an inch and a half long, irregular in outline, and ragged on its inner aspect. The ventricle, together with the other cavities of the heart, contained a quantity of blood, and an *ante mortem* clot of some size was found in the apex of the left ventricle.

On more careful examination, after washing away the blood clot, it was found that the middle two-thirds of the outer ventricular wall was thinned, and that the most prominent part of the margin, along which the rupture had occurred, contained little or no muscular tissue, and was not thicker than ordinary brown paper. Elsewhere in the outer wall of the ventricle three small perforations were found, the largest about the size of an ordinary pea, and the smallest not exceeding a pin-head in circumference. The tissue of the whole organ was pale, and easily crumbled under pressure. It was in a marked condition of degeneration, but of what precise nature the change consisted it was impossible to say in the absence of microscopic examination, which unfortunately was not undertaken. Both mitral and aortic valves were competent, and there was no atheromatous change to be felt in the aortic arch. The left coronary artery was tortuous and much distended.

The pathological lesion in this case is an uncommon one, but it entirely explains the sequence of symptoms. At first the condition looked most like one of acute dilatation, but later on it became evident that, at any rate, this was not the whole story,

because the development of a friction-murmur and the further increase of cardiac dulness declared the existence of pericarditis. The puzzling symptom throughout was the recurrent dyspnoeal attacks, but in the light of *post mortem* evidence it would seem probable that each of these seizures was the direct result of one of the small perforations found in the ventricular wall, while the enormous rent along its free margin fully explained the terrible suddenness of death. The condition of the walls of both ventricles was one of such degeneration as to make it marvellous how the woman could possibly have lived so long as she had done. Except for the soft and pulpy state of the heart texture, the evidence otherwise pointed to the change in tissue as having been of a fibroid nature, leading gradually to an aneurysmal dilatation of the margin of the ventricle, but whether the degeneration were fibroid or fatty, it was surely unusual to find it in such pronounced form in a middle aged woman who believed herself to be perfectly healthy; who had never in her lifetime suffered from inflammatory or other acute disease; who had sustained no injury or strain to account for the commencement of the degenerative process; and who, until the day when this illness began, was absolutely free from any symptoms to arouse her own, or her friends' suspicions that there was the least serious departure from her usual rude health.

REPORTS OF SOCIETIES.

BRITISH ORTHOPÆDIC SOCIETY.

[We regret that owing to pressure on our space we were unable to insert a notice of the first meeting of the British Orthopædic Society, which took place in January last.]

The first provincial meeting of this society took place at Liverpool, on May 24th, under the presidency of Mr. ROBERT JONES.

Mr. Tubby (London), read notes of a case of talipes equinovarus, drawing attention to the rotation inwards of the lower end of the tibia and fibula which complicated these cases. He had performed osteotomy of the lower end of the tibia, the limb being afterwards put up in plaster with a satisfactory result.

The paper was discussed by the President, Mr. Murray (Liverpool), and Mr. Luke Freer (Birmingham).

Mr. Luke Freer showed photographs of a case of extreme rachitic genua valga, successfully corrected by MacEwen's osteotomy eight years since. A week ago she was again seen with pronounced genua vara, evidently due to rachitis adolescentium.

Mr. Murray and Mr. Tubby made remarks on the case.

Mr. Robert Jones opened a discussion on the treatment of intractable talipes equinovarus. He maintained that the condition was always avoidable, and that relapse was generally due to carelessness on the part of patients' friends or the practitioner. The causes of relapse were (*a*) insufficient correction of deformity, (*b*) superincumbent body weight on outer side of tarsus, (*c*) slack and lengthened state of muscles opposed to the deformity. The foot is not cured until the patient can voluntarily place it in the position of valgus, when the act of walking becomes a beneficial factor in the correction of the deformity. In discussing the methods of treatment—including that of manual correction, subcutaneous division of deep structures and tendons, forcible wrenching, tarso-clasis, open incision, linear osteotomy, removal of astragalus or cuboid, and tarsectomy—Mr. Jones thought that good results might be obtained by several different methods. After describing Phelps' operation, he argued that it had more effect on the varus deformity than on the equinus; and the cases he had seen after the operation seemed rather deficient in the power of putting the heel to the ground. He had performed Lund's operation six, and wedge-shaped tarsectomy thirteen times; but although his results were fairly satisfactory, he had discarded the operative treatment for that of forcible wrenching. Mr. Jones then described in detail the mode of twisting by means of Thomas' wrench. He always

divided the tendo-Achillis before proceeding to further treatment, and rarely found it necessary to divide any other tendons. In the after-treatment, he preferred the application of a cheap iron shoe to plaster appliances, and described the simple device of adding an iron flapper to the outer edge of the boot in order to complete the eversion of the foot during walking. The rotation inwards of the leg he corrected last of all by osteoclasm. This internal rotation could always be avoided if one began treatment early by twisting the tibia and fibula outwards in their long axis. The cases he had shown that evening, all of extreme character, were proof of the efficacy of this method of treatment. Very little pain attached to the method, treatment had only to be continued for a few months, and there was absolutely no risk involved.

Mr. Tubby had never found tarsectomy necessary, and had seen some very bad results from it. He considered the wrench a very satisfactory instrument in intractable cases.

Mr. Murray preferred the removal of a wedge-shaped piece from the outer side of the foot, irrespective of bones or joints. He had performed the operation forty-two times in thirty-four patients.

Mr. Luke Freer said that severe relapsed cases treated by tenotomy and daily manipulative after-treatment would usually be well, with pliable feet, under three months. He was in favour of the wrench rather than tarsectomy in cases where the hand was not sufficient, and agreed with the use of simple retentive apparatus easily removable for manipulation.

Mr. Newbolt (Liverpool), said that osteoclasis should be done through the tibia and fibula, not through the femur.

Mr. Robert Jones replied.

The next meeting will be held during the "British Medical" week, in London.

REVIEWS.

ESSAYS IN HEART AND LUNG DISEASE*

THE volume before us consists of a collection of essays and papers, written by Dr. Foxwell during the last ten years, most of which have previously appeared in print; but they have now been carefully revised, with the addition of much new matter.

We may say at once that the book is a most creditable piece of work. It represents a great deal of thoughtful study, and though it is impossible to agree with the author in all his conclusions, there is scarcely a page without valuable and suggestive information. From a literary point of view, the book has very considerable merit. It is instinct with a scholarly spirit, and is written with a freshness of style and a fulness of illustration—clinical and otherwise—which makes it eminently readable, a feature which is very welcome in this much over-book-burdened age. We think that the author is not always so lucid as might be desired, and here and there it is a little difficult to follow his argument; and we confess that words such as “slowlier,” “commonliest,” and “understandable” (of which there are several instances) are not much to our liking. But these are small faults, and the perusal of the book, as a whole, has been a source both of pleasure and profit to ourselves, and is likely to be so to others.

The contents include papers on Dyspnœa, Expectoration in Phthisis, Catarrh, Climate, Non-tubercular cavities in the Lungs, Curability and Prognosis of Phthisis, the Vascular System in Anæmic Debility, Arterial high-tension, Congestion of the Lungs, Hæmoptysis, and Antiseptic treatment of Phthisis.

The chapters upon Catarrh are very interesting. Dr. Foxwell regards Catarrh as an acute specific disorder, which is usually but not necessarily pyrexial, moderately contagious, and de-

* Essays in Heart and Lung Disease. By Arthur Foxwell. M.D., Cantab. London; Charles Griffin and Co. 1895.

pendent upon a micro-organism which in all probability is the pneumococcus of Friedländer or Fraenkel. Though the latter may, under special circumstances, acquire sufficient virulence to attack healthy individuals, a predisposition is more often necessary, in the shape of some depressant, such as chill, alimentary disorder, or insanitation. He believes that catarrh may include any one or more of the following affections:—a variety of acute pneumonia, coryza, quinsy, glossitis, sore-throat, laryngitis, croup, bronchitis, gastro-intestinal catarrh, meningitis, peritonitis, pleurisy, pericarditis, nephritis, hepatic congestion, vesical catarrh, and some eruptions of the skin, especially herpes. A portentous list indeed, but it must be noted that the author does not claim that these diseases are always due to catarrhal influence, but that any one or more of them may be set up by the catarrhal virus under favourable circumstances, and strong reasons are advanced in support of this view, together with illustrative cases. Many of the so-called idiopathic forms of these diseases are to be explained in this way, and light is also thus thrown on the frequency with which they co-exist.

Attention is drawn in this chapter to two most important points concerning the interpretation of abnormal temperature. Firstly, that elevation of temperature, *per se*, is but the measure of the *intensity* and *amount* of febrile disturbance, and should not be regarded in any way as an essential and necessary characteristic of a specific disorder of microbic origin. Dr. Foxwell seems to think that for this reason it would be better no longer to consider pyrexia as part of the connotation of the febrile condition; but this is surely both undesirable and unnecessary. Secondly, is the importance which should be attached to the behaviour and general march of the temperature, as distinguished from its elevation; and in this connection, Dr. Foxwell says, that a type of temperature-disturbance which he calls "sub-normal hectic" never occurs without grave suspicion of organic disease.

The chapters upon Climate, though light and sketchy, give many valuable hints to the practitioner who requires guidance

in the selection of a suitable resort for phthisical patients; and these are all the more valuable as they are largely based upon personal investigations made upon the spot.

The lectures which deal with the condition of the vascular system in anæmic debility are also full of interest, not only because of the many new observations recorded in it, but as a capital instance of the practical advantages to be gained by thoughtful analysis even of the simplest signs and symptoms. The space at our disposal prevents us from criticising these lectures with that detail which the importance and interest of the subject deserve, and therefore one or two comments must suffice.

We fully endorse the opinion of the author as to the pre-eminent value of percussion as a means of ascertaining the size of the heart, and of differentiating the share taken by the two sides of the heart respectively in causing enlargement. Further, as we ourselves have always taught, superficial percussion is on every ground to be preferred to deep percussion. At the same time we fail to understand how completely enclosed areas, such as those figured in the diagram on page 340, can be established by superficial or any other method of percussion alone.

The explanations of the morbid cardiac phenomena which are met with in anæmic debility are very ingenious, and carefully worked out. But again the author must pardon us if we do not follow the explanation which he offers of the dilatation of the right heart and accentuated second sound over the pulmonary artery. He credits the right heart with an *endeavour* to give the anæmic more oxygen by accelerating the pulmonary circulation, and thus working with more than normal force; this, too, in the face of an admitted reduction in the energy of the anæmic heart. We think that Dr. Foxwell is rather too fond of crediting the tissues of the body with quasi-volitional attributes, as when, on page 325, he speaks of inflammation being a process of *defence*, and, on page 168, of pyrexia being a process of *resentment* on the part of the tissues. To our mind, a far more rational and plausible explanation of the dilatation of the right heart, and the accented pulmo-arterial second sound, is

that which is so ably discussed by Sir George Johnson in a paper published by him in the *British Medical Journal* of April 21st, 1894, in which he shows that deficient oxygenation of the blood, by reason of its effect upon the vaso-motor centres in the medulla, gives rise, in the first degree, to constriction of the systemic arterioles with a rise of pressure in the systemic arteries and left heart; while, in the second degree, it causes a constriction of the pulmonary arterioles with a corresponding rise of pressure in the right heart. In the latter stage, owing to imperfect supply of blood to the left heart, the systemic arterial pressure falls, and the left heart becomes relatively empty. That this is the more probable explanation of the phenomena in question, is supported by a statement of Dr. Foxwell's in the foot-note on page 342 (and his accuracy on matters of pure observation is of an exceptionally high order), to the effect that anæmia is sometimes accompanied with high tension of the systemic arteries, "*but most of these high-tension anæmias are not severe ones.*" Quite so. In our opinion they represent a lower grade of mal-oxygenation, as Sir G. Johnson would probably say. The suggestions for the treatment of anæmic debility are admirable; and, indeed, throughout the book the therapeutic paragraphs are characterised by sound common sense and singularly good judgment.

One of the neatest pieces of work in the volume, in our opinion, is the chapter upon arterial high tension. The facts are admirably marshalled, and are set forth in the happiest phraseology with a clearness and simplicity which should satisfy the most exacting. Many illustrative cases are, moreover, deftly woven into the text for the purpose of making the practical application of the information afforded abundantly clear.

If we refrain from any criticism of other articles, it is not from any failure in our appreciation of them, for there is not one which will not amply repay the careful reader. In conclusion, we heartily congratulate Dr. Foxwell upon his book, which not only does him the greatest credit, but indubitably enhances his reputation both as an original worker and as an independent thinker.

INDIGESTION.*

THIS, the second edition of Dr. Herschell's book, is somewhat enlarged. As the author remarks, it does not profess to be a complete treatise on the subject, but rather an introduction to the study of gastric disease. With this object, the first portions are devoted to the physiology of digestion, followed by a general sketch of the various forms of indigestion and the conditions under which they may arise. We note, in passing, that the author says he is unable to agree with Dr. Saundby that tea-drinking is not so injurious amongst women of the lower class as is supposed.

Chapter III. is on the Interrogation of the Patient, and seems to us unnecessarily detailed. It is followed by a chapter on Physical Examination, which is rather too like a "case-taking card" that has undergone hypertrophy. Under the head of Auscultation are some curious items. At the same time, the various special methods of examination—such as estimation of motor power, test breakfasts, and the technique of the clinical chemistry of digestion—are very clearly given. Following this is a special chapter on the Etiology, Symptoms, and Differential Diagnosis of the Chief Diseases of the Stomach. In some ways the author may be said to "make too much of it," as frequently happens in monographs; for, in some instances, he makes other morbid conditions apparently the result of digestive disorder, *e.g.*, pulmonary consumption, but which are more probably the chief derangement, with indigestion as a complication.

One of the special features of this edition is a series of twenty-seven "cases" at the end of the volume, some of which are followed by "questions." These "cases" are not always well selected. There is also an extensive bibliography, in which many articles are conspicuous by their absence. As a whole, the book is of value to the practitioner and senior student, and will be particularly useful in getting up the various methods.

* Indigestion. By George Herschell, M.D. Second edition, Baillière, Tindall, and Cox.

A MANUAL OF THE MODERN THEORY AND TECHNIQUE OF SURGICAL ASEPSIS.*

THIS octavo volume of three hundred pages is one of a "New Aid Series of Manuals for Students and practitioners," published in Philadelphia. The leading idea of its author has been to write a practical book that would in a measure meet the deficiency of the larger works on the subject. Theory has not been entirely omitted, for the reason "that most of the technique of modern wound treatment is founded upon experiment conducted in the laboratory." An important feature of the book—so at least regarded by the author—is that a stricter line of demarcation than usual is drawn between wounds aseptically performed by surgeons, and those otherwise inflicted, or those dependent upon inflammatory processes. Among the antiseptic drugs, iodoform is assigned the most prominence, and in regarding its extensive employment by the profession, its advantages and disadvantages are thoroughly discussed. The question of tuberculosis also is exhaustively considered in its relation to asepsis. An entire section is devoted to anæsthesia. The volume is clearly written and is evidently the work of an aseptic enthusiast who subordinates all else in surgery to the claims of this very latest mistress. Aseptic surgery—or surgery without chemicals, as it might aptly be called—stands doubtless on a logical basis and commends itself therefore to every thoughtful practitioner, but whether as a practical system its theoretical demands can always be secured is another matter altogether. We can recommend Dr. Beck's manual to our readers as an excellent exposition of the "very latest" in the treatment of wounds as practised by leading German and American operating surgeons. The volume is nicely got up, the illustrations plentiful and well chosen, and the price only five shillings.

*A Manual of the Modern Theory and Technique of Surgical Asepsis. By Carl Beck, M.D., Visiting Surgeon to St. Mark's Hospital and to the German Poliklinik of New York City, &c. Illustrated. Philadelphia: W. B. Sanders. 1895.

DIPHTHERIA AND ITS TREATMENT.*

THE writer of this little book states that during the first ten years of his professional career, although in that time he says he probably prescribed for every other known throat affection, he never saw a case of diphtheria. He also states that during the last six years he has treated with magnesium sulphite, externally by insufflation and internally by tabloids, in order to "saturate the tissues with pure sulphurous acid," more than 150 cases in which membrane was present, and probably about 100 more which were undoubtedly septic. It will be quite clear to anyone reading this book that many cases included by Dr. Martin in the above estimate were not diphtheria at all. It follows from this that his boasted results—viz, complete recovery without sequelæ of any kind in more than 150 cases of diphtheria met with during six years—cannot for a moment be considered as trustworthy. The book itself proves, on almost every page, that the author cannot arrive at a correct conclusion from the simplest premises. If anything could be more illogical than the conclusion drawn from a statement of Dr. Cormack's, quoted from Quain's Dictionary, it is the argument based on the illnesses of two children narrated on page 25, where there is nothing to show that the children were not suffering from entirely different diseases. With regard to the main issue, we should like to point out to Dr. Martin that in the *Lancet* for 1887, Vol. I., p. 404, there is a letter, which he has either ignored or never seen, on the use of magnesium sulphite in the treatment of diphtheria, written by Dr. W. G. Burnie, of Bradford, and calculated to dispel any delusion he may cherish as to claiming this method for his own.

* Diphtheria and its Treatment : a Practical Treatise on Diphtheria and its Successful Treatment. By Brownlow R. Martin, A.B. and M.B. Dublin. London : Baillière, Tindall, and Cox. 1895.

CLINICAL LECTURES ON THE PREVENTION OF CONSUMPTION.*

THESE lectures give a good and clear account of the etiology of consumption and of its relations to external factors. The author strongly believes in the communicability of phthisis, and he brings forward several forcible instances in support of this. He points out the much greater weight attached to this subject abroad as a very probable source of tubercular infection. While some of the chapters are perhaps too brief, others are well written, such as those bearing on Tubercle from the Lower Animals, Soil and Drainage, Overcrowding, etc. At the end of the book is a list of Practical Points, which really forms the gist of the work.

The book gives a good idea of the present position of the question, and will repay reading.

TOURIST GUIDE TO THE CONTINENT.

WE have received from the Great Eastern Railway Company a copy of their Tourist Guide to the Continent, edited by Mr. Percy Lindley. The Guide is compact, and well suited to the requirements of those who wish to pay a flying visit to the more frequented parts of Northern Central Europe. The plans are useful and clear. There are several faults to be found with the book, as, *e.g.*, the fact that hotels are not given at the commencement of each paragraph devoted to a town, and there is altogether too much unnecessary wordiness. Still the book is useful and appears trustworthy, and cyclists will find the last section particularly valuable.

* Clinical Lectures on the Prevention of Consumption. By William Murrell, M.D., F.R.C.P. Baillière, Tindall, and Cox.

THE MEDICAL ANNUAL, 1895.*

THIS volume in every way comes up to its predecessors as a useful review of the year's progress in medicine and surgery. Besides the usual information on subjects of interest to the practitioner, there are many important articles, among which may be mentioned those on Abdominal Injuries, by Mr. Barling; Abdominal Surgery, Intestinal Surgery, and the Surgery of the Spleen, by Mr. Mayo Robson. In this latter is an account of a successful case of "splenectomy" by Dr. Malins.

Among medical articles there are several valuable contributions, such as Diphtheria, by Dr. Ruffer; Diet in Diseases of the Stomach, by Dr. Saundby; Friedreich's Disease, by Dr. H. W. J. Mackenzie. There is a very practical paper on Methodical Diagnosis of Diseases of the Ear, by Dr. Dundas Grant; and Mr. Simeon Snell contributes one on Eyesight and School Life.

The book contains several plates and illustrations, which are well executed. The publishers are to be congratulated on their "Annual" for 1895.

St. John's Hill, Shrewsbury,

July 8th, 1895.

To the Editors of the BIRMINGHAM MEDICAL REVIEW.

Dear Sirs,—Would you kindly make a correction in this issue of the *Review* as to the pathological character of the case of tumour of the tonsil which I reported in the June number. The tumour was a *spindle-celled* sarcoma, *not* a lympho-sarcoma. It was the spindle-celled character which made it rare and interesting. I may add that the tumour recurred repeatedly, and the patient finally died of exhaustion last week.

Faithfully yours,

W. CHARNLEY.

* The Medical Annual, 1895. Bristol: John Wright and Co.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

We have received from the Apollinaris Company an analysis of a new spring recently opened at Friedrichshall. The following are the results of the analysis, comparing it with those of the old spring :—

Parts in 1,000.

—	Fischer. 1894.	Liebig, 1846.
Sulphate of Soda ...	5.9461	6.0560
„ Magnesia ...	5.9624	5.1502
„ Lime ...	0.7408	1.3456
„ Potash ...	0.1707	0.1982
Chloride of Sodium ...	7.3112	7.9560
„ Magnesia ...	4.7135	3.9390
Bromide of Magnesia ...	0.0072	0.1140
Carbonate of Soda ...	0.3168	0.0000
„ Magnesia ...	0.0113	0.5198
„ Lime ...	0.2193	0.0147
Carbonic Acid ...	0.2338	0.4020
Silicic Acid ...	0.0012	Traces
Oxide of Iron ...	Traces	Traces
Alumina ...	Traces	Traces
Total ...	25.6443	25.6955

MESSRS. BURROUGHS AND WELLCOME send us samples of Tabloids composed of compressed Compound Rhubarb Powder (Gregory's Powder), and Ipecacuanha Wine, respectively, and of "Tabloids Alkaline and Antiseptic." The latter contain Bicarbonate, Benzoate, Biborate, and Salicylate of Soda, Eucalyptus, Thymol, Menthol, and Ol. Gaultheriæ; and are to be used in solution as a gargle, or spray for the nose and throat. The mixture should prove an efficient one.

From MR. JOHN M. RICHARDS we have received samples of Lactopeptine Tabloids, a convenient form of this undoubtedly valuable preparation.

New Books, etc., Received.

- Diphtheria and its Associates. By LENNOX BROWNE, F.R.C.S. Ed., Senior Surgeon to the Central London Throat, Nose, and Ear Hospital. London : Baillière, Tindall and Cox. 1895.
- Early Scoliosis, or Curable Curvature of the Spine. By PERCY G. LEWIS, M.D. London : John Bale and Sons. 1895.
- The Care of the Baby: a Manual for Mothers and Nurses. By J. P. CROZIER GRIFFITHS, M.D., Clinical Professor of Diseases of Children, etc. Philadelphia : W. B. Saunders. 1895.
- Mentally Deficient Children: their Treatment and Training. By G. E. SHUTTLEWORTH, B.A., M.D., late Medical Superintendent, Royal Albert Asylum. London : H. K. Lewis. 1895.
- Hygiene and Public Health. By LOUIS C. PARKES, M.D., D.P.H., Lecturer on Public Health at St. George's Hospital Medical School, etc. Fourth edition. Illustrated. London : H. K. Lewis. 1895.
- Leprosy in its Clinical and Pathological Aspects. By Dr. G. ARMAUER HANSEN, Inspector-General of Leprosy in Norway; and Dr. CARL LOOFT, formerly Assistant Physician to the Lungegaards Hospital. Translated by Norman Walker, M.D., F.R.C.P. Ed., Assistant Physician for Dermatology, Edinburgh Royal Infirmary. Bristol : John Wright and Co. 1895.
- Some Points in the Practice of Lithotrity or Litholopaxy. By REGINALD HARRISON, F.R.C.S., Surgeon to St. Peter's Hospital. London : John Bale and Sons. 1895.
- The Conditions of Radical Cure in Cancer, and Other Papers. By HERBERT SNOW, M.D. Lond., etc., Surgeon to the London Cancer Hospital. London : J. and A. Churchill. 1895.
- Professional Abuses and their Remedy. By WILLIAM MOXON, M.D., President of the Midland Branch of the British Medical Association.
- The Truth about Vaccination. By ERNEST HART, D.C.L., Editor of the *British Medical Journal*. London : Smith, Elder, and Co. 1895.
- Herbal Simples Approved for Modern Uses of Cure. By W. T. FERNIE, M.D. Bristol : John Wright and Co. 1895.
- The Practitioner*, January to June, 1895. London : Cassell and Co. Lim. 1895.

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THE
BIRMINGHAM MEDICAL REVIEW.
SEPTEMBER, 1895.

ORIGINAL COMMUNICATIONS.

THE OPERATIVE TREATMENT OF FRACTURES
OF THE SKULL.

BY GEORGE HEATON, M.B., F.R.C.S.
SURGEON TO THE GENERAL HOSPITAL.

DURING the past five years in which I have been connected with the General Hospital, there have been admitted into its wards more than 280 cases of fractured skull, and in 72 of these cases it has been found necessary to perform the operation of trephining for the relief of the injury done to the skull or its contents.

Of these 72 cases it has fallen to my lot to perform the operation in 15 of the cases; and in many of the remaining ones I have been a witness of the operation. I have thought it would be of some interest to tabulate the results of these cases, and briefly to discuss the principles which at present guide surgeons in the treatment of injuries in this neighbourhood, more especially as to the question of interference or non-interference. It is only by such discussion, and tabulation of all the results following any particular line of treatment, that we can hope to arrive at the best course to pursue in any given case.

Fractures and injuries of the skull derive their interest and importance almost entirely from the injury which has been simultaneously inflicted on the delicate nervous structures which the skull encloses. It is entirely owing to this fact that the

treatment of these cases differs in any essential detail from the treatment of fractured bone in any other region of the body. The problems for us to solve in each case are, firstly, what injury has been inflicted on the enclosed brain matter by the violence which has caused the fracture ; and secondly, whether any active operative interference is called for or necessary for the successful repair of that damage.

It is of primary importance in dealing with fractured bone, either in the skull or in any other region of the body, to keep such fracture, if possible, simple ; and we must have very grave reasons to justify a departure from this practice in the treatment of injuries of any region.

Until not many years ago, the operation of trephining was considered to be one of such gravity as to be but rarely justifiable, and only to be had recourse to as a last resource. When so resorted to, it was doubtless a measure which reflected no credit on the surgeon, and was attended by disastrous results for the patient, who was, in most cases, already beyond the reach of human aid. But now, performed early and with reasonable precautions and with strict regard to cleanliness, the operation has come to be a simple and comparatively safe one. So much so that in any case of doubt, the patient should be advised to submit to it rather than incur the risks inseparable from treatment based upon an incomplete knowledge of the injury received.

I will now shortly describe the recognised methods of treatment of the various forms of fractured skull, and briefly give the reasons for the adoption of active surgical measures, or pursuing what has been termed a "masterly inactivity" in each case.

Mere fissured fractures of the skull, when unaccompanied by actual wound or any depression of the bones, and where no symptoms save those of cerebral concussion are present, are in many cases not to be diagnosed with absolute accuracy, and require only the treatment of fractured bone in any other region of the body, plus the extra care which we should always give to

cases of head injury. When, in addition, there are symptoms of cerebral compression, immediate operative interference is indicated to remove, if possible, the cause of the pressure on the brain, be it blood or inflammatory effusion. In the case of simple depressed fractures, our course is not quite so clear. When deepening coma is present, our course is evident enough, but cases of simple depressed fracture without symptoms admit of considerably greater latitude of treatment. The following considerations will materially guide us in the course we pursue in any given case.

Firstly, the age of the patient. Cases are frequently brought to us, in the out-patient departments of our hospitals, of children who, in the act of birth or from falls, have had portions (and in some cases very large portions) of their skulls driven in, and who yet seem not a whit the worse. Injuries which in adults would certainly have been followed by the gravest cerebral complications, in these young children seem frequently to produce nothing more than a transient concussion, and are rightly left alone. But in adult life, with its thicker and more brittle bone, a much greater violence is necessary to produce the same amount of depression, and this violence will in most cases injure the soft parts, and so render the fracture a compound one.

The position of the depression will also guide us in our treatment. Depressions over the motor areas of the brain are far more likely to be followed by paralysis, or to produce permanent after-effects than similar depressions in other regions of the skull.

Lastly, the depth and nature of the depression will assist us in arriving at a conclusion. Large shallow depressions, distributed over a large area of bone, are the least serious. The sharper and deeper the depression, the more liable is it to be followed by after ill-effects. In adults, at any rate, in such cases there is almost certain to be considerable comminution and splintering of the inner table. These splinters press on the dura mater, and even if not in themselves sufficient to cause

ulceration or sloughing of that membrane, are afterwards, when increased in size by the callus thrown out by Nature in her efforts at repair, one of the most potent causes of traumatic epilepsy.

We now pass on to survey the treatment of compound fractures. Here, again, as in the simple fractures, when the fracture is not depressed, there is a general consensus of opinion as to our mode of treatment—viz., with symptoms pointing to compression; to operate at once; and when such symptoms are absent, to pursue an expectant treatment accompanied, if it is possible, by an even greater attention to cleanliness than in other compound fractures. Such accidents, in the great majority of cases, do very well. The only cases which give rise to anxiety are where, after an inefficient cleansing, the wound has closed without drainage. I have twice seen a fatal suppurative meningitis follow a small compound fissured fracture of the skull without there being any wound in the dura mater; and in each case it has been due, in the first instance, to a want of drainage in the original wound. A drainage-tube in these cases is, like the safety-valve of a steam engine, the best way of avoiding the risk of a calamity.

We may take it almost universally for granted that whenever we find a fracture with depression of the external table as the result of direct external violence, the evidence of the injury received will be still more manifest and striking in the inner table. This is but natural when we consider the nature of the bone and the direction of the violence. Struck by a sharp body, the external table of the skull, supported as it is by the diploe and internal table, yields in some slight degree before splintering. But the inner table, supported only by the soft diffuent brain matter beneath, splinters in all directions, as would a deal board when pressed by a blunt body.

The most important factor, however, in determining the relatively large amount of splintering we meet with in fractures of the internal table is the hard brittle consistency of the bone. The external table is more elastic, and will bend considerably

before it breaks; the internal table, on the contrary, splinters and cracks like porcelain.

These sharp spicules of the inner table will, in the majority of such depressed fractures, be found pressing vertically on the dura mater, if this membrane has not already been torn, and are very prone to cause ulceration and destruction of it over the seat of injury if left *in situ*. In fact, I maintain that we cannot in any way gauge the injury and damage to the internal table by a mere examination of the external one. We do occasionally, but only rarely, meet with cases in which, from but slight direct violence, the external table only has been depressed. The depressed portions of the outer table are in these instances driven into the cancellous tissue of the diploe, and the internal table escapes; but such cases are uncommon and quite the exception.

Should the wound happily unite, and no immediate bad results happen from this pressure by sharp portions of the internal table on the brain and its membranes, their presence, and the presence in addition of the reparative callus which Nature throws out for the repair of the injury, will be extremely apt to set up a localised meningitis with much thickening of the membranes, and this may in time lead to Jacksonian epilepsy.

But a very few years ago it was laid down as an axiom, in cases of compound depressed fractures of the skull without symptoms pointing to compression, to wait before applying the trephine, unless the depression were very deep, or there was patent evidence of tear of the dura mater and laceration of brain substance; and even now such procedure is still advocated by some authorities. But the golden rule in all such cases is to trephine at once; for by its use alone can we ascertain for certain the amount of damage inflicted on the bone beneath, and on the brain and its enclosing membranes. When there is any comminution and depression of the fracture, it is impossible to guarantee the asepticity of the deeper parts of the wound without thorough removal of the fragments, and exploration. Any such expectant

treatment is as much out of place and out of date as is the treatment of a strangulated hernia without opening and investigating the contents of the sac before reduction ; for both methods of treatment, based as they are on a timid kind of surgery, though in some cases successful, are certain occasionally to be the indirect cause of a fatal termination.

In dealing with this question it must be borne in mind that the term compound depressed fracture of the skull includes injuries of every grade of severity. Comparisons of cases treated by one or other method are of no value whatever. The term compound depressed fracture of this region includes injuries of every grade of severity, from the small compound fissured fracture, with some little depression of one or other fragment, to those severe cases in which the skull is pulped almost beyond recognition, and the delicate brain-matter within is damaged beyond all hope of recovery ; and it is of course quite out of the question to compare these, relatively trivial, where perhaps no operative treatment was deemed necessary, with cases in which the severe comminution of bone or loss of brain matter rendered immediate interference imperative.

As to the operation itself of trephining, though not going into any detailed description of the steps of the operation, there are one or two points to which I should like to refer.

In cases where coma is present, no anæsthetic is called for ; in fact, its use will prevent the appearance of returning consciousness which we may hope to see. When an anæsthetic is to be given, chloroform should always be preferred, as causing less cerebral congestion. The *whole* scalp should be shaved and well scrubbed with soap and water, and great care be taken to remove all loose hairs and dirt from the wound. Wagner *—quoted by Jacobsen—relates a case in which such a hair caught in a fissure was the cause of a septic infection.

Where the flap can be fashioned, Victor Horsley's method of raising a semilunar one is the preferable, as affording the best drainage ; but in compound fractures, the already existing

* Volkmann's Samml. klin. Vorträge, p. 271.

wounds must of course be utilised. Our choice of trephine is a large one. It should be as simple as possible in its mechanism, and one in which the central pin can be entirely detached.

The Americans have invented a conical-shaped trephine in order to minimise the risk of puncture of the dura mater. But wounds of this membrane are not made so much by a slipping of the trephine as by making the trephine-groove deeper on the one side than the other, or not allowing for the varying thickness of the skull.

I have tried the use of the chisel and mallet in two cases instead of the trephine, but have discarded them as being more prone to wound the dura by slipping than a properly applied trephine.

Small bleeding vessels in the dura mater are occasionally difficult to secure, the ligature being very apt to slip when being tightened, or to produce a fresh rent. They are in such cases best secured with a sharp tenaculum.

As to replacement of bone after operation, my principle is to replace the bone in all cases in which the bone injury is not a compound one, and in which therefore the responsibility for the asepticity of the wound rests on the shoulders of the operator alone. But in compound fractures, especially if at all dirty, I believe it is far safer not to do so. The scar tissue which is eventually formed in its place is extremely dense, and the dura mater and pericranium, if carefully replaced, will in time produce a new covering of bone over the aperture, if not large. In Case No. 2, in which a cerebral abscess followed my operation of trephining, and in which the patient ran a very narrow risk of his life, I feel sure that the replaced portions of skull were the cause of my wound being septic.

Drainage of the wound is of primary importance. The collection of any effusion, whether it be blood, serum, or pus, is here fraught with the greatest risk to life. Pent up under pressure of the skin flaps and bandages, such] effusion will quickly be forced inwards, and if any wound of the dura mater be present, set up a diffuse meningitis. The drainage need

not be immediately over the trephine aperture, and the presence of a small tube, or a few strands of catgut brought out in the angle of the wound, will not increase but rather diminish any risk of hernia cerebri.

General suppurative meningitis, either following the operation or already present when the operation has been delayed, is at present an absolutely fatal complication.

One of the drawbacks to the use of the trephine is its liability occasionally to produce a necrosis of a thin shell of bone around the edge of the trephine aperture. The damage done by the teeth of the saw seems in such cases to have been too much for the vitality of the bone close to, which has already lost its blood supply from the periosteum. These small shell-like pieces of bone occasionally delay the final healing of the wound.

Where suppuration does not occur, the risk of hernia cerebri is infinitesimal. To avoid its occurrence, it is of great importance to obtain primary union of all the soft parts immediately over the rent in the dura mater.

Appended are two statistical tables, in each of which the cases have been arranged in the same manner. Table I. is a list, with short details, of all my own operation cases; while Table II. is a short summary of the results of all the cases operated upon at the General Hospital during the past five years.

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A quantity should also be kept in flat dishes or vessels on the floor. It will not injure carpets; in fact, it preserves and improves fabrics and fibres ... 1 teaspoonful in a pint of water.

A small quantity of the solution should be put into night-commodes before use ... 1 teaspoonful to a pint of water.

Keep a solution boiling in the kettle in the sick-room; the steam is infallible in killing the germs of infection in the air. "EUCALYPT" is well adapted for this purpose, being perfectly volatile ... A few drops in a kettleful of water.

Hang a blanket or sheet outside the door, and keep it well saturated with the solution.

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HOSPITALS &c.—To purify and Sweeten the air of Hospital Wards, Sick Rooms, Nurseries, &c.—Wash or sprinkle floors with a solution of one part "EUCALYPT" to eighty of water. The best mode of using it is with a "SPRAY DIFFUSER," which should be kept constantly in the room for use as required.

LAUNDRY USES.—It is invaluable and unrivalled in excellence, and being a preservative of Wood, does not injure the Machine, &c. Use in the rinsing water ... 1 teaspoonful to 2 gallons of water.

PREVENTIVE MEASURES—To prevent the spread of Infectious Diseases.—Remove from the sick room all curtains, and if possible, carpets. All bed-clothes and other articles removed from the patient should be placed in a METAL pail (which should be kept in the room for the purpose) containing a strong solution of the “EUCALTURP.”

SHIPS.—To purify Cabins and Bunks on Board Ship.—Thoroughly sweep and wasp or scrub out with a solution of one part “EUCALTURP” to one hundred of water

Ditto.—For Holds and Bilges of Vessels, Cattle Trucks, Pens, &c.—Use one part “EUCALTURP” to forty of water. (N.B.—The fluid will not mix with brackish or salt water).

STREETS.—To Purify Streets, Roads, Courts, Alleys, &c.—Mix one pint of “EUCALTURP,” with about three gallons of water, and pour into a water-cart holding 200 gallons of water.

N B.—The above are approximate proportions, and it may be necessary to vary the strength sometimes according to circumstances.

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TABLE I.—*My own Cases.*CLASS I.—*Compound Depressed Fracture of the Skull. Coma not present, Dura Mater not wounded. Immediate Trephining.*

NO.	NAME.	AGE.	SEX.	DESCRIPTION OF INJURY.	DATE OF OPERATION.	RESULT.	REMARKS.
1	J— R—	17	M.	Deep and large depression of Right Parietal Bone.	Aug. 9, 1890.	Healed by first intention.	Large trephine applied at edge of depression. All depressed bone removed. Dura mater much pressed upon, but intact.
2	H— C—	12	M.	Compound depressed fracture of Frontal Bone.	Sep. 16, 1892.	Cure.	Small depressed fracture produced by a brick. Depressed bone replaced in small fragments, and wound closed. Cerebral abscess formed deeply in Left Frontal Lobe and opened on October 1st. Immediate relief and cure. Replaced bone all removed, one portion discharged from cerebral abscess.
3	S— B—	11	M.	Compound depressed fracture of left side of Frontal Bone.	Nov. 15, 1892.	Cure. Primary union.	Inner table found much splintered and depressed. Dura mater beneath black, but intact. Depression size of a florin. Wound drained.
4	F— R—	24	M.	Small compound depressed fracture of Vertex.	Jan. 17, 1894.	Cure. Primary union.	Small depression. Depressed portion removed with trephine. Wound closed. No wound of dura.
5	—	—	M.	Compound depressed fracture of right side of Frontal Bone.	Feb. 18, 1894.	Cure. Some suppuration along track of tube.	Much dirt ground into wound. Five large pieces of bone removed. Wound drained. Dura intact.

NO.	NAME.	AGE.	SEX.	DESCRIPTION OF INJURY.	DATE OF OPERATION.	RESULT.	REMARKS.
6	W— G—	11	M.	Bullet wound of Frontal Bone.	Mar. 14, 1894.	Cure. Sinus into frontal sinus for some time.	Frontal sinus opened. Inner wall of sinus splintered. Wall removed. Dura mater found intact. Bullet in ethmoidal cells.
7	J— M—	46	M.	Small compound depressed fracture of Right Parietal Bone.	May 8, 1894.	Cure. Wound suppurated.	$\frac{3}{4}$ -in. trephine applied. Depressed bone removed. Crown of bone replaced. Suppuration 15th day on dressing. Bone found loose and dead. Removed. Wound granulated up. Crown of depressed bone removed.
8	W— G—	8	M.	Small compound depressed fracture of Vertex.	May 29, 1894.	Cure. Primary union.	Crown of depressed bone removed.
9	E— V—	10	M.	Old punctured fracture of Frontal Bone.	Feb. 6, 1895.	Cure.	Old fracture with suppuration for $2\frac{1}{2}$ months. Crown of bone removed, with inner table much depressed. Dura mater covered with granulation tissue. Suppuration going on in diploe. Wound healed slowly.
10	C— G—	19	M.	Large compound depressed fracture of the Occipital and both Parietal Bones.	May 1, 1895.	Cure. Primary union.	Portions of bone the size of 5s.-piece driven deeply into skull over the torcular hirophili. Trephine applied over non-depressed portion. Many large fragments elevated and removed. The inner table was extensively separated from the outer. Dura mater over torcular slightly cut, but not torn through. Bone not replaced.

CLASS II.—Compound Depressed Fracture of the Skull. *Dura Mater or Brain lacerated. Immediate Trephining.*

NO.	NAME.	AGE.	SEX.	DESCRIPTION OF INJURY.	DATE OF OPERATION.	RESULT.	REMARKS.
11	W—J—	8	M.	Large compound depressed fracture of Right Temporal and Parietal Bones, with tear of Mid. Meningeal Artery	Aug. 12, 1891.	Cure. Primary union.	Very large lacerated wound. Brain lacerated and protruding from wound and on patient's clothes. All depressed bone removed. Meningeal artery tied. Flap laid in place and sutured over lacerated dura.
12	A—A—	28	M.	Large depressed fracture of Left Parietal, Occipital & Temporal Bones.	Sep. 28, 1892.	Cure. Aphasia for long time, and weakness of right side.	Fracture extending from sagittal suture to base. Much depression. Bone measuring 4½ inches removed. Dura mater much lacerated and torn. Large blood-clot removed from beneath dura.
13	G—S—	4	M.	Compound depressed fracture of Left Temporal Bone with wound of Dura and loss of Brain substance.	July 2, 1893.	Cure. Primary union.	Large comminuted depressed fracture with brain tissue protruding. Bone removed. Large triradiate tear in dura mater sutured. Bone replaced.

CLASS III.—Compound Depressed Fracture with Coma.

NO.	NAME.	AGE.	SEX.	DESCRIPTION OF INJURY.	DATE OF OPERATION.	RESULT.	REMARKS.
14	C— L—	33	M.	Compound comminuted depressed fracture of Frontal and Parietal Bones, with coma.		Death 36 hours after.	Wound enlarged. Loose bone elevated and removed. Dura mater and brain much lacerated. Wound closed at sides only. No return of consciousness. <i>Fest moriem</i> , 3 ribs fractured. Fracture of left tibia and fibula and tear of perineum, with much hæmorrhage into brain substance.

CLASS IV.—Compound Depressed Fracture of Skull. Secondary Trephining after onset of Inflammatory Symptoms.

NO.	NAME.	AGE.	SEX.	DESCRIPTION OF INJURY.	DATE OF OPERATION.	RESULT.	REMARKS.
15	M— S—	5	F.	Punctured fracture of Vertex 10 days old, with symptoms of meningitis.	April 30, 1892.	Cure. Healing by granulation.	Temp. 103. Rigors and delirium. Depressed bone removed with trephine and bone around freely removed. Dura mater torn and covered with sloughing fetid granulations. Wound thoroughly cleansed and left open.

NOTE.—Since compiling the above table I have had another case of Secondary Trephining after the onset of symptoms of meningitis. Death followed from acute septic meningitis.

TABLE II.

Classification of 72 Cases of Compound Depressed Fracture of the Skull, in which the operation of Trephining was performed at the General Hospital. The ages of the patients varied from 3 years to 70. There were 65 men and 7 women.

CLASS I.—*Compound Depressed Fracture of the Skull without Coma ; Dura Mater not torn ; immediate Trephining.*

41 cases with 40 recoveries ; mortality 2·06 per cent.

CLASS II.—*Compound Depressed Fracture of the Skull without Coma ; Dura Mater torn and Brain exposed or lacerated ; immediate Trephining.*

22 cases with 17 recoveries ; mortality 22·7 per cent.

CLASS III.—*Compound Depressed Fracture of Skull with deep Coma ; immediate Trephining.*

5 cases with 1 recovery ; mortality 80 per cent.

CLASS IV.—*Compound Depressed Fracture of Skull ; Trephining performed after onset of symptoms of Intra-cranial Suppuration.*

4 cases with 1 recovery ; mortality 75 per cent.

The result of operation in Class I. has been eminently satisfactory. In my own Table all the cases have recovered, and in Table II. there has been only one fatal case. In that one a septic inflammation spread through the damaged though untorn dura mater, setting up a diffuse meningitis.

It was necessary to separate cases in Class I. from those in Class II. In the latter class the injury is of a much more severe character, the dura mater in all these being torn, and in many the brain much lacerated, or even, as in two of my own cases, having some brain tissue protruding and scattered about the scalp and clothing.

Even if the patient survive the immediate shock of the injury, the risks of meningitis or intra-cerebral suppuration are of course enormously increased, and in any case the ill-effects due to the brain injury are very liable to be permanent.

Class III. represents a still more serious group of cases. In all these, save one, the *post mortem* examination revealed such laceration of the brain-matter, or hæmorrhage into its substance as well as on to its surface, as to preclude the possibility of recovery. The only successful case in this class was a most interesting one, in which respiration had actually ceased before the operator, Mr. Haslam, opened the dura mater and removed blood clot from beneath it.

The last class, Class IV., is happily a small one, and, it is to be hoped, will become smaller each year. It is a list of those cases in which there has been a compound depressed fracture, but in which the patient has not been admitted into hospital for operation until the onset of symptoms of intra-cranial suppuration has occurred. In three of these cases diffuse suppurative meningitis was already present at operation, precluding all hopes of recovery. My own successful case only owes its successful issue to the fact that the pus was still confined between the dura mater and the skull bones, the dura, though covered with sloughy granulation tissue, being still intact.

We have, then, side by side, 41 cases in which trephining was immediately performed with but a single death, though the anatomical lesions in some of the cases were extremely severe, with the four cases with only one recovery in which an expectant plan of treatment had unfortunately been adopted, or in which the original depression had been so slight as to have been overlooked until too late. We can wish for no stronger proof of the pressing importance of immediate trephining in all such cases.

I would end what I have to say on this subject by quoting the words of Dr. Roberts when discussing the propriety of exploration in all doubtful cases of head injury.*

"I would cut through the scalp to see the condition of the outer table, and I would cut through the bone to see the condition of the inner table in every case where the risk of obscure knowledge is greater than the risk of divided scalp and perforated bone."

* Annals of Surg., Vol. ii., No. 7, p. 14.

ON SYNOVITIS AND SUPPURATIVE ARTHRITIS OCCURRING AS COMPLICATIONS OF ERYSIPELAS.

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THE occurrence of joint inflammation, whether synovitis or suppurative arthritis, as a complication of cutaneous erysipelas, is a subject completely ignored, so far as I have been able to ascertain, by the writers of most English text-books, or, if referred to at all, dismissed in a very few words. This notwithstanding the fact that, since Abercrombie,* in 1837, described a case of what he called Erysipelatous Peritonitis, much stress has been laid upon the fact that erysipelas may be complicated by such lesions as suppurative meningitis, pericarditis, pleurisy, etc., and much discussion has taken place as to the connection between these complications and the primary disease. One of the first writers to call attention to the subject was Charcot,† who, in 1866, recorded the observation of facial erysipelas provoking attacks of acute and chronic articular rheumatism; and not infrequent references to it are found in French and German literature since that date.

These arthritic complications of erysipelas may be divided into two main classes :—

- 1, Non-suppurative Synovitis.
- 2, Suppurative Arthritis.

I have been able to collect records of 817 cases of erysipelas, some of which have been recorded by Ritzmann and by Legendre and Baussenet; while the remainder have been treated at the London Hospital and St. Mary's Hospital (to the Surgical Registrars of which I am indebted for valuable information), and at the General Hospital, Birmingham. In these 817 cases synovitis or suppurative arthritis occurred in 12—that is, in 1·46 per cent. In these statistics I have included the two cases of which I give details below, and may mention it as a curious fact that, while the percentage of

* Diseases of the Stomach, 1837, p. 181.

† Société méd. des Hôpitaux, 1866, T. iii., 2e série, p. 323.

joint complications shown by a large number of cases of erysipelas is so small, yet out of six cases occurring at the Jaffray Hospital during the winter of 1894-5, two were complicated by arthritis of a serious nature. This corresponds to the variability in frequency of the occurrence of arthritis during the course of the specific fevers, the complication being very rare in some epidemics, quite common in others.

PATHOLOGY.

Synovitis during Erysipelas.—The only recorded observation that I can find is that of Max Schuller,* who states that he found the streptococcus of erysipelas in the fluid from a case of erysipelatous hydrarthrosis.

Suppurative Arthritis during Erysipelas.—It will be well to turn for a few moments to the pathology of erysipelas itself. Some years ago Fehleisen discovered in the spreading border of a patch of erysipelas the presence of the streptococcus erysipelatosus, which, after cultivating through seventeen generations, he inoculated into a man, and produced a typical attack of cutaneous erysipelas. If an erysipelatous patch be examined microscopically, it will be found that the streptococcus occurs and multiplies within the lymph channels, and that the spread of infection takes place along the lymphatic vessels, but not necessarily in the course of the lymph stream. Morphologically the streptococcus erysipelatosus and the streptococcus pyogenes are practically identical; but, while the former is only rarely found in the vicinity of blood-vessels, the latter can always be seen arranged round the blood-vessels, entering their walls, and often even penetrating into their lumen. The difference between the two micro-organisms can only be made out for certain by inoculation experiments, such as those of Hajek,† who showed that the inoculation of the streptococcus erysipelatosus into rabbits always produced a condition exactly resembling cutaneous erysipelas in man; while the inoculation of the

* Berlin. klin. Woch., 1885, p. 333; quoted by Mauclaire in Arch. Gén. de Méd., Jan., 1895.

† Senn's Principles of Surgery, p. 358, et seq.

streptococcus pyogenes always caused a more deeply seated inflammation, which almost invariably ended in suppuration. Fehleisen goes so far as to hold that the streptococcus erysipelatosus is incapable of causing suppuration, and that all suppurative complications of erysipelas are produced by the streptococcus pyogenes; in other words, that a double inoculation must have taken place. Hajek* agrees that suppurative arthritis complicating erysipelas is caused not by the streptococcus erysipelatosus, but by the streptococcus pyogenes. Smirnoff,† however, met with a case of erysipelas of the left hand; and in one of the left metacarpo-phalangeal joints he found the streptococcus erysipelatosus. Again, this observer found in the right shoulder and knee joints of a man, who had died of erysipelas, enormous collections of the same organism. Moreover, the synovial fluid from the latter case injected into rabbits, caused true erysipelas. He does not, however, state whether the joints in question were suppurating or not. But we have more definite evidence than this that the streptococcus erysipelatosus can cause suppurative arthritis; for Wolkman and Schuller‡ state that, in the pus from a purulent arthritis occurring during facial erysipelas, they found a streptococcus resembling in every way that of Fehleisen; while Hoffa,|| in 1886, was able to cultivate the streptococcus of Fehleisen, which he had found in a suppurating joint consecutive to erysipelas. Again, Winchsell§ made subcutaneous injections into guinea-pigs of cultivations of the streptococcus erysipelatosus, and produced suppurative arthritis and suppurative pleurisy in addition to erysipelas.

The results of these experiments may fairly be taken to prove that suppurative arthritis complicating erysipelas is caused by the streptococcus erysipelatosus.

* Senn's Principles of Surgery, p. 358, et seq.

† Senn's Principles of Surgery, p. 358, et seq.

‡ Mauclaire, Archives Gén. de Méd., Jan., 1895.

|| Mauclaire, Archives Gén. de Méd., Jan., 1895.

§ Centralblatt für Chirurgie, 1887, Vol. ii, p. 345.

There arises the question—How is the streptococcus conveyed from the seat of the erysipelas to the affected joints? For the consideration of this point we must divide these cases of suppurative arthritis into two classes :—

a. Where the erysipelatosus blush involves the skin immediately over the affected joint.

b. Where the affected joint is in a part of the body distant from the seat of the erysipelas.

In Class *a* the streptococcus gains access to the joint by direct continuity of tissue, making its way along the lymphatic vessels ; for, as was mentioned above, it can spread itself along these vessels in a direction contrary to the natural flow of the lymph stream. Hence, in this class of cases there is not necessarily any general infection of the system.

But in Class *b*, whatever the general symptoms of the patient, and whether one or more joints be affected, the process must be looked upon as being truly pyæmic in its nature. It is now generally held that pyæmia is not a disease *per se*, but that it can be produced by the diffusion and lodging in the tissues of the ordinary micro-organisms of suppuration *plus* a lessened resisting power of the tissues. The experiments quoted above prove that the streptococcus erysipelatosus is the cause of the suppurative arthritis, and therefore it must be held that, in the cases included in Class *b*, the streptococcus has been conveyed from the original seat of the disease to a joint in a distant part of the body, and has there given rise to metastatic suppuration ; in other words, has caused pyæmia. Thus, true pyæmia must be looked upon as one of the possible complications of cutaneous erysipelas, and as being caused, under such circumstances, by the streptococcus erysipelatosus. In the list of cases given below will be found several in which erysipelas gave rise to pyæmia with multiple joint inflammations, visceral abscesses, etc. In this capability of causing general infection of the body with metastatic abscesses, the streptococcus erysipelatosus resembles the pneumococcus and the typhoid bacillus,* each

* Flexner, Journal of Pathology and Bacteriology, April, 1895, pp 202 et seq.

of which, in addition to the essential lesion of pneumonia or typhoid, as the case may be, can cause localised foci of supuration and even general infection.

CLINICAL FEATURES.

Synovitis.—At a variable stage of the attack of erysipelas, one or more joints are found to be swollen and painful. The joints affected may be at a distance from or in immediate proximity to the seat of the primary disease. Of this variety Boucher * relates two cases, one being that of a man who, on the twentieth day of an attack of erysipelas of the head and face, and when desquamation was general, developed swellings of both knees and wrists. There was no history of rheumatism, and the joints were perfectly free from fluid within fourteen days afterwards. The other case was also one of facial erysipelas. On the eighteenth day of the disease both knees and ankles became filled with fluid, which, however, disappeared within a few days. The prognosis of these cases, both with regard to the mobility of the joint and the life of the patient, is good.

Suppurative Arthritis.—The earlier the arthritis appears during the course of erysipelas, the more acute are its symptoms. In such early cases there is great swelling of the joint, with intense pain accompanied by high fever, and, unless energetic treatment be adopted, grating and other signs of complete disorganisation of the joint soon manifest themselves.

It is by no means uncommon, as the erysipelatous rash is fading, or after it has completely disappeared, to find one or more small abscesses in the subcutaneous tissue of the part previously the seat of the rash. These come on often without rise of temperature and without pain. At a corresponding period of the disease suppuration of one or more joints may be set up. The swelling comes on insidiously without much pain and with little or no constitutional disturbance, while there is no redness or œdema of the skin over the joint, unless indeed there be some remains of the erysipelatous blush. In such

* *Considérations sur les Complications Tendineuses et Articulaires survenant dans le Cours de l'Erysipèle.* Paris. 1883.

cases the presence of pus may not be suspected at first, but after a time the swelling and pain increase, and the use of an exploring needle proves the true nature of the case. On opening such a joint, many ounces of pus may be found, but there will be not nearly so much general disorganisation as in the earlier and more acute cases. These remarks as to the severity of the local symptoms apply both to those cases where the streptococcus erysipelatosus has gained access by continuity of tissue, and to those where pyæmic infection has taken place.

I have lately had under my care at the Jaffray Hospital two cases of suppurative arthritis complicating erysipelas, and of these the following are some details:—

Case 1. T. H., a boy aged 5 years, was admitted into the Jaffray Hospital on August 25th, 1894, suffering from tubercular disease of the right hip. The joint had been excised nine months previously by Mr. Haslam, and at the time of admission there were three sinuses in its neighbourhood. During May, 1894, the patient had erysipelas, commencing around the sinuses and spreading all over the right lower limb, but the attack was uncomplicated. On November 25th, 1894, three months after admission into the Jaffray Hospital, the temperature rose to 104° , and a patch of erysipelas appeared on the outer side of the right hip and soon extended over the whole limb. On December 1st—*i.e.*, on the sixth day of the disease—the temperature had sunk to $100\cdot5$ and the rash was fading, though some redness still remained over the knee. Now, for the first time, some fluid was detected in the right knee, the joint being extremely painful. On December 2nd the temperature was $102\cdot4^{\circ}$, and on December 3rd the joint was opened by free lateral incisions, and nearly a pint of healthy-looking pus was let out. No erosion of cartilage could be felt. The joint was irrigated, drained, and fixed, and by the end of February, 1895, had soundly healed in a good position, but with such an amount of fibrous ankylosis that it could be flexed through only about 30 degrees.

Case 2. C. P., a boy aged 15 years, was admitted into the

Jaffray Hospital on July 20th, 1894, having been for two months previously under Mr. Barling's care at the General Hospital. Eleven months before admission, the patient had rheumatic fever, and he stated that ever since then his joints had been "stiff." At the time of admission he had severe bed-sores, and there was more or less complete fibrous ankylosis of all the joints of his limbs. There was no fluid or any sign of active disease about the joints. On February 13th, 1895, the temperature rose to $105\cdot4$, and the patient had a rigor. On the same day an erysipelatous blush appeared on the perinæum and inner side of the right thigh, having, it seemed, commenced at an abrasion at the junction of the skin and mucous membrane of the anus. The next day the blush had spread on to the leg, and the temperature was 105° . On February 20th the temperature was $102\cdot4^{\circ}$, and the blush had begun to subside, though some still remained about the right thigh and knee; and on this day—*i.e.*, on the eighth day of the disease—the right knee-joint became swollen. On February 24th the temperature was $102\cdot6^{\circ}$, the right knee was greatly distended, but there was not much pain in the joint, and the skin over it was neither red nor œdematous. At this time I hesitated to diagnose the presence of pus; but on February 28th, when the temperature was $101\cdot8^{\circ}$, the swelling and pain were much more marked, and an exploring needle withdrew pus from the joint. On March 3rd—*i.e.*, as soon as sanction could be obtained—free lateral incisions were made into the knee, and more than a pint of pus evacuated. Some old fibrous adhesions could be felt, but there was no erosion of cartilage. On June 6th the joint was perfectly sound, but firmly ankylosed.

The first of these cases I should consider an example of the more serious form of arthritis, which generally comes on during the earlier stages of the erysipelas. True, when the joint first became affected, the rash had begun to subside; but, from the severity and acuteness of the symptoms, there seems little doubt that the joint would have become rapidly disorganised unless energetically treated. The second case, occurring as it

did when the rash had almost disappeared, and the symptoms being quite sub-acute, must be looked on as belonging to the class of less serious cases. Both cases have one all-important feature—viz., that the skin over the affected joint had been the seat of the erysipelatous rash; hence the arthritis can be accounted for by the probability that the streptococcus erysipelatosus had spread from the skin to the joint along the lymphatics. In these two instances, therefore, there is no reason to suppose that there was any general infection of the system by the streptococcus.

From various sources I have been able to collect seventeen other cases of suppurative arthritis complicating erysipelas, and I append some brief particulars of them:—

1.—Ankle	...	...	recorded by Ritzmann ¹	Pyæmia, death.
2.—Ankle	...	...	" "	" "
3.—Elbow	...	...	" "	Recovery.
4.—Shoulder	...	...	" "	"
5.—Ankle	...	...	" "	{ Recovery with anky- losis.
6.—Ankle	...	...	" Augerhauser ¹	{ Resection, recovery.
7.—Knee	...	...	" "	{ Incisions, death.
8.—Knee and Ankle	...	...	" Volkmann	{ Incisions, pyæmia, death.
9.—Ankle	...	...	" "	{ Resection, recovery.
10.—Ankle	...	...	" "	{ Amputation.
11.—Knee	...	...	" Gaillard ²	{ During facial erysi- pelas, died on 12th day.
12.—Knee	...	...	" Monod and Macaigne ³	{ During facial erysi- pelas, death
13.—Knee	...	...	" "	{ During facial erysi- pelas, incisions, death.
14.—Wrist	...	...	" Legendre and Baussenet ⁴	{ Incisions, recovery.
15.—Joint not specified	...	...	" "	{ Death.
16.—Joint not specified	...	...	" "	{ Widespread suppara- tion beyond joint, death.
17.—Knee & shoulder	...	...	" "	{ Cellular tissue with visceral complica- tions, death.

The addition to these of my own two cases gives a total of nineteen.

¹ Archives Gén., loc. cit.

² Soc. méd. des Hôp., 1893.

³ Revue de Chirurgie, 1894, p. 85.

⁴ Soc. méd. des Hôp., 1893.

{ All quoted by
Mauclaire, loc. cit.

An analysis of these cases shows that three are expressly stated to have been pyæmia; that in three others the patient suffered from facial erysipelas, and that a distant joint suppurated; while in one other the knee and shoulder suppurated. In each of these seven cases we are justified in holding that there must have been a general infection by the streptococcus, and each of the seven cases was fatal. In speaking of the pathology of this affection, I stated that suppuration in a joint distant from the seat of erysipelas must be held to be pyæmia, and that the prognosis therefore is extremely grave. The result of these seven cases seems to bear this out. In the above list there were three other fatal cases, but no particulars are given. In all, nine cases recovered. In seven of them the relation of the joint affected to the seat of the erysipelas is not stated. In two others—namely, those at the Jaffray Hospital—there was apparently direct infection of the joint

PROGNOSIS.

As to the utility of the joint, the prognosis depends on exactly the same factors as in other cases of suppurative arthritis. As to the life of the patient, I would repeat that the prognosis is very much more grave where the erysipelas causes suppuration in a distant joint.

TREATMENT.

In cases of synovitis, perfect rest of the joint is sufficient.

In cases of suppurative arthritis, free incisions and absolute fixation are needed. Amputation may be necessary.

NOTE.—Mr. Lucas, who at the present time has charge of the surgical cases at the Jaffray Hospital, tells me that he has lately had to re-open the knee-joint of the first of my cases and scrape away some undoubtedly tubercular granulation tissue. There seems, therefore, to have been an invasion of the joint by the tubercle bacillus following some time after the acute arthritis.

WHEN AND HOW TO CURETTE THE UTERUS.

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INDICATIONS.

THE operation of curetting the uterus is indicated in a number of pelvic disorders which differ widely in their nature and their gravity.

1. Probably the lesion that most frequently demands its performance is chronic *Endometritis*. But great care is required in the proper selection of cases; and this for two reasons:—

(a) Many cases of endometritis recover completely without any operation. Thus in a simple uncomplicated case we would first try the effect of non-surgical remedies—rest, hot douches, saline aperients, glycerine and ichthyol tampons, such drugs as bromide of potash, chlorate of potash, hydrastis and viburnum, and the occasional swabbing out of the uterus with iodine or carbolic acid. Should these measures fail, curetting is distinctly indicated, and will, in the great majority of cases, effect a cure.

(b) Endometritis is frequently associated with other and much more serious pelvic lesions, which call for a very different line of treatment. Thus endometritis, due to sepsis or gonorrhœa, is often complicated with pelvic cellulitis and peritonitis, with ovaritis, salpingitis, or pyosalpinx. To curette the uterus in the presence of such lesions would be to court disaster. I have seen a slumbering salpingitis converted into a virulent and fatal pyosalpinx by such a proceeding. It may be laid down as an absolute rule that if there be evidence of periuterine inflammation or disease of the uterine appendages, curetting is contra-indicated.

2. The second great class of cases which call for curetting are those where we have, as the result of the *incomplete emptying of the pregnant uterus*, the retention within its cavity of pieces

of membrane, fragments of placenta, even portions of a putrid foetus. These retained materials may give rise, on the one hand, to severe uterine hæmorrhage, and on the other to septic absorption. The symptoms are not at all in proportion to the size of the offending fragment. It is remarkable how small a piece of placental tissue—not larger than a hazel nut—will cause frightful and persistent floodings. On the other hand, I have removed a mass of placenta as large as a man's fist, which had been retained in utero for many months, and which only caused an offensive discharge.

In these cases there must be no delay in operating—no dallying with medicinal remedies. Ergot and hydrastis are useless to relieve the hæmorrhages; antiseptic injections will not stop the offensive discharges; quinine and antipyrin will not check the progress of septic absorption. As soon as the presence of the offending fragment is diagnosed it must be removed with the curette. In no class of cases does operative interference yield more brilliant results. The hæmorrhage ceases at once, the offensive discharge disappears, the symptoms of septic intoxication subside, and the patient's health is restored with marvellous rapidity.

But it must be remembered that in the septic cases the prognosis depends to a large extent on the degree of septic absorption. If it be only a sapræmia, the removal of the putrid fragment will cure the patient; if it be a septicæmia, the outlook is much graver. Curetting will undoubtedly save many cases of puerperal septicæmia where the *fons et origo mali* is a mass of necrosing material in the uterus, and where the systemic infection is not profound. But it is obvious that if a pyosalpinx have formed, or there be suppurative peritonitis, curetting will do positive harm. Curetting is not a panacea for puerperal fever: much discrimination is required in the selection of suitable cases. The best results are obtained where the symptoms clearly point to a retained and putrid fragment in the uterus, where the surgeon is called in at an early stage of the disease, and where the clinical phenomena are those of septic intoxication rather than of septic infection.

3. There are two diseases of the uterus in which curetting has been advocated as a palliative—viz., myoma and cancer. It has been recommended in certain cases of *myoma* as a means of checking the excessive losses. I cannot too strongly condemn such a proceeding. If the tumour be causing symptoms severe enough to call for interference, then it is better to perform removal of the appendages, myomectomy, or hysterectomy. If the symptoms be so slight as not to call for such severe measures, rest and the usual medicinal remedies will suffice. Curetting, at best, would only temporarily relieve the patient, and might do infinite harm by inducing sloughing of the tumour and subsequent septicæmia.

So, also, in the case of *cancer*, it is questionable if it afford any but the most transient benefit. Even if it temporarily relieve the patient, it is obvious that we cannot by its means remove the whole disease and cure the patient. I have, it is true, seen striking temporary relief afforded by freely scraping and gouging away the friable rotting diseased surface, and then vigorously searing with Paquelin's cautery the raw tissue exposed. The hæmorrhage and stinking discharge cease for a time, the patient's pain diminishes, she puts on flesh, and frequently buoys herself up with false hopes of cure. But, at best, the respite is short; and in many cases when the disease again manifests itself, it advances with fearful rapidity. When the growth is strictly limited to the cervix or the endometrium, we should offer the patient the more certain hope of cure afforded by vaginal extirpation of the uterus. If the disease be too far advanced for this operation, the less we interfere with it the better.

4. Lastly, curetting is occasionally demanded for *diagnostic purposes*. Where we suspect that the patient is suffering from early cancer or sarcoma of the uterus, we may obtain, by curetting, fragments of tissue for microscopic examination, and may thus diagnose malignant disease in its early and most remediable stage.

ARMAMENTARIUM.

The armamentarium for curetting the uterus should include the following :—anæsthetics, antiseptics, Clover's crutch, razor,

speculum, vulsellum forceps, a set of uterine dilators, a set of curettes including a "flushing curette," uterine sound, scissors, six Playfair's probes (or some substitute) armed with absorbent wool, Paquelin's cautery or a bottle of iodised phenol, iodoform gauze, sponges or gauze compresses, catheter, douching apparatus. I shall presently refer in detail to the use of these various instruments.

ASEPSIS.

It is of the utmost importance that everything that comes in contact with the genital tract during the operation be aseptic. The instruments should be made entirely of metal and should be boiled for fifteen minutes in soda solution (1 per cent.) immediately before each operation. Instead of sponges I now use gauze-compresses made of a square of gauze folded into eight thicknesses. These should be sterilised before the operation by boiling or steaming for an hour. They are not quite so absorbent as sponges; but they are cheap, easily prepared, and easily sterilised. The same compress should never be used twice, and after the operation all that have been used should be destroyed. For the disinfection of the hands of the surgeon, his assistant, and the nurses, I believe in prolonged scrubbing with soap and lysol solution (1 in 100), using a nail brush and loofah, followed by immersion in corrosive sublimate solution (1 in 1,000).

PREPARATION OF THE PATIENT.

The preparation of the patient is important. When we can choose our time the operation is best performed about midway between two periods. In many cases, however, as when the hæmorrhage is continuous or the symptoms are urgent, we must operate without delay. For twenty-four hours before the operation she must rest in bed. . The bowels must be freely opened the day before; and on the morning of the operation an enema should be given to ensure an empty rectum. The vagina should be well douched the evening before, and again on the morning of the operation, with some reliable antiseptic solution—lysol, iodine, or corrosive sublimate. Immediately before the operation

the nurse should pass the catheter and empty the patient's bladder.

The patient having been anæsthetised she must be placed in the lithotomy position—and this is most conveniently effected by Clover's crutch. Even in cleanly women the hair about the genitals is laden with micro-organisms and hence should now be shaved off with a razor. The vulva should be scrubbed with soap and lysol water (1 in 100), care being taken to remove the sebaceous matter that is apt to collect in the various folds.

The vagina should be similarly cleansed and as far as possible rendered aseptic. It should be vigorously wiped out with pads of sterilised gauze, in order to remove as far as possible the thick mucous discharge that besmears it. This mechanical scouring is more effective in freeing the vagina of germs than is mere douching with antiseptics.

Before commencing the actual operation a final bimanual examination should be made in order to make sure that there is no disease of the appendages and that the uterus is not fixed by perimetric adhesions.

INSERTION OF SPECULUM.

The perineum must be pulled back by some form of speculum. Sims' duck-bill speculum is the form usually employed for this purpose, but it necessitates the employment of an assistant. I can strongly recommend, in place of it, the use of Auvard's speculum. This is heavily weighted with a ball of lead, so that the instrument is self-retaining, and by its own weight pulls back the perineum and posterior vaginal wall. I have found it of great service when I have had to perform curetting without assistance. It can only be used, however, when the patient is in the lithotomy position.

DILATATION OF THE CERVIX.

The next step is to dilate the cervix. This is not always necessary. For instance, in puerperal cases the os is usually widely gaping and the canal patulous. There are numerous methods of effecting dilatation, each of which has its own peculiar drawbacks, though some are much more objectionable than

others. Of all methods, that involving the use of tents is the most dangerous. The risk of sepsis, with all its disastrous consequences, is so great that tents may at once be dismissed from consideration.

Vulliet's method of dilating the cervix has been strongly advocated in America and on the continent. It consists in repeated packings of the uterus with iodoform gauze. An antiseptic vaginal douch having been given, the cervix is seized with vulsellum forceps and pulled down to the vulva. A long narrow strip of iodoform gauze is packed firmly into the uterus, and then the vagina is loosely filled with the same material. Every twenty-four hours the gauze is removed, a douch given, and fresh gauze inserted. In from seven to fourteen days the whole cervical canal is sufficiently dilated to allow the surgeon's finger to explore the uterine cavity. The great drawback of the method is the length of time it takes. On the other hand it secures very complete dilatation of the cervix, it is practically painless, and is devoid of risk if done with antiseptic precautions.

Mr. Lawson Tait's method of dilating the cervix consists in slowly forcing through it a series of conical dilators, by means of continuous elastic pressure. By this ingenious contrivance the surgeon is able, in the great majority of cases, to secure perfect dilatation. The whole process takes from twelve to forty-eight hours. It is usually somewhat painful and may necessitate the administration of morphia. It requires careful adjustment of the elastic cords in order to direct the dilator in the axis of the canal—otherwise it may plough its way into the tissue of the cervical wall.

It is, however, a great advantage to be able to effect the whole process of dilatation whilst the patient is under chloroform—dilating the cervix and curetting the uterus at the same sitting. For this reason I prefer the method of rapid dilatation by means of Hegar's dilators or some modification thereof. It is far less troublesome for the surgeon, it involves no suffering on the part of the patient, and I believe it to be safer than any of the methods of slow dilatation.

The particular dilators I myself prefer are those introduced

by my friend Dr. Hawkins-Ambler, of Liverpool. I have used them extensively for the past ten months, and have found them very satisfactory. They consist of a graduated series of metallic bougies constructed on the principle of the "wedge-shaped" bougies used for dilating the male urethra. Being made of solid steel, they are easily rendered aseptic by boiling in soda solution (1 per cent.) for a few minutes. Having a highly-polished surface, they slide in with a minimum of friction. A set of six will be found sufficient for all ordinary purposes, and will easily, rapidly, and safely effect dilatation.

The anterior lip of the cervix should be seized with vulsellum forceps and drawn down to the vulva. If the uterus be so held by adhesions that it cannot be pulled down, the operation had better be abandoned. Having ascertained by means of the uterine sound the precise depth of the uterus and direction of its canal, the surgeon holds the vulsellum firmly in the left hand and with his right slowly passes the smallest-sized dilator (smeared with some antiseptic lubricant) into the uterus. If it meets with no resistance he at once withdraws it and passes the next size. If the cervix grips the dilator and resists its passage, the surgeon must press the instrument *very slowly* home. Having got it in he should wait a little before withdrawing it. After a longer or shorter pause the grip of the cervix will be found to relax, and then the instrument may be withdrawn and the next size inserted. If this relaxation of the cervix does not occur within a few minutes the instrument should be withdrawn and reinserted.

The limit of safe dilatation varies in different cases. Where the patient has previously had a child it is usually easy to dilate the cervix until it will admit the forefinger. But if the uterus be nulliparous, and particularly if it be infantile, the process of dilatation is more difficult, takes a longer time to effect, and should not be carried to the same extent. As a rule it is possible to dilate a parous uterus in from ten to fifteen minutes, whilst a nulliparous womb may require half an hour or more. When the most resisting part of the cervix is at the external os it is sometimes necessary to nick it bilaterally with scissors before

dilating. The chief objection to the method of rapid dilatation is that if the tissue of the cervix be very resistant it will not stretch but tear. If unnecessary violence be employed, the uterus may be perforated or even ruptured by vertical splitting. Such accidents, however, should never occur if reasonable care be taken and there be no undue force or haste on the part of the surgeon.

A less serious accident is laceration of the cervix, which may occur if its tissue be very soft and vascular, the teeth of the vulsellum tearing out when the dilator meets with resistance. If the degree of dilatation permit, the forefinger should now be passed into the uterus and its cavity explored.

APPLICATION OF THE CURETTE.

For nearly all cases the sharp curette will be found preferable to the blunt one, and the best form is a modification of Simon's sharp spoon. It should be made wholly of metal so that it may be sterilised by boiling before each operation. The largest size that will easily pass the cervix should be gently introduced and passed without any force until it impinges on the fundus. Steadying the cervix with the vulsellum the sharp edge should be pressed firmly against the mucosa and the curette drawn slowly down—scraping off a vertical strip of the whole thickness of the mucous membrane and exposing the muscular coat.

By a repetition of this manœuvre a series of parallel strips are removed until first the anterior, then the posterior, and then the lateral walls are completely denuded. The surgeon must then carefully curette the fundus and the two upper lateral angles leading to the Fallopian tubes.

CLEANSING THE UTERUS.

The flushing curette is a most useful instrument when the uterus contains much debris—as in cases of retained secundines. The handle and stem are tubular, and if the instrument be connected with the tubing of a hydrostatic douch-can, will permit of the passage into the uterus during the process of curetting of a constant stream of weak anti-septic solution which carries with it, as it escapes through the cervix, all clots and loose fragments

of tissue. If the solution be used hot enough it will also check bleeding.

If the flushing curette be not used, the clots and tissue debris should be wiped away by means of probes covered with absorbent wool. The instrument commonly used for this purpose is "Playfair's probe." This consists of a wooden rod capped with metal. It is objectionable because blood, etc., is apt to lodge between the wood and the metal, or soak into the wood, and be a source of sepsis. Where the probes are made wholly of metal (steel or aluminium), they are not open to this objection, being easily sterilised by boiling or by being heated in a flame. They are however somewhat expensive (costing three or four shillings each).

For the last two years I have used wooden skewers ("pheasant skewers") instead of Playfair's probes, and have found them to answer admirably. I buy them from the poulterers in bundles of a hundred. To prepare them, the ends must be roughly rounded off with a penknife and the skewers boiled or steamed for an hour or more to sterilise them. When wanted for use, the end should be wetted and the wool rolled on in a thin film. They are so cheap (costing sixpence to one shilling a hundred) that one can afford to destroy, after each operation, all the probes that have been used. No probe is used twice, and in this way the risk of carrying septic infection from one uterus to another is reduced to a minimum. When it is remembered how frequently curetting is performed in septic cases, it will be seen that this risk is no imaginary one.

APPLICATION OF CAUSTIC.

Having thoroughly washed out or wiped out the cavity of the uterus and cleared away all clots and *débris*, we should apply to the raw surface left some powerful cauterising or disinfecting agent. For a long time I used to sear the interior of the uterus with Paquelin's cautery. The objection to its use is that the caustic effect is not distributed evenly over all the raw surface. The lateral angles and part of the fundus are apt to be missed, whilst the cervix may be so severely burned that sloughs form.

At each spot it sears, its germicidal influence is of course intense; but it does not affect all parts equally, the sulci, crevices, and lateral angles escaping. For this reason it is better to swab out the uterus with a caustic liquid such as iodised phenol, applied on a wooden probe armed with absorbent wool. Any excess of the caustic that trickles out of the cervix must be at once removed with absorbent wool or gauze sponges.

PACKING THE UTERUS.

A long narrow strip of iodoform gauze (one inch wide and one yard long) should be ready at hand, and the uterus firmly packed with it, the end being left hanging out of the cervix into the vagina. This gauze packing serves four useful purposes—it soaks up all excess of iodised phenol, it checks bleeding from the denuded surfaces, it protects the raw surface from infection from the vagina, and it ensures drainage of the uterus. The vagina must be wiped free from clots, etc., and then lightly packed with iodoform gauze. A pad of antiseptic absorbent wool is placed over the vulva and fixed with a T-shaped bandage. The gauze may be removed on the third day, and thereafter the vagina douched night and morning with lysol or iodine water. In all cases the patient must stay in bed for ten days after the operation.

RESULTS.

The immediate risk of the operation is extremely small and the ultimate result excellent, *if* the operation be skilfully performed, in suitable cases, and due aseptic precautions be taken. Conversely, if the surgeon use unnecessary force or bungle his work, or disregard contra-indications, or neglect the rules of surgical cleanliness, the patient runs the gauntlet of such disasters and complications as rupture or perforation of the uterus, laceration of the cervix, pelvic cellulitis, pelvic peritonitis, salpingitis, pyosalpinx, septicæmia, and pyæmia—truly a formidable list! Not one of these evil sequelæ ought however to occur if the surgeon follow the indications I have laid down in this paper.

THE RADICAL CURE OF UTERINE PROLAPSE.

BY FRED EDGE, M.D., F.R.C.S.,

SURGEON TO THE WOMEN'S HOSPITAL, WOLVERHAMPTON.

WITHOUT expending too much time on preliminary matters, I will briefly attempt to refresh one's memory on a few points concerning prolapsus of the uterus.

In the first place, it is of prime necessity that the term should be used as the equivalent of "sacropubic hernia" (Hart and Barbour).

The factors producing prolapsus uteri are mainly as follows :—

(1) Deficient support by the entire fixed portion of the pelvic floor; this chiefly comprehends laceration of the perinæum, and loss of the fixed point of the perinæal muscles, and laceration or overstretching of the levator ani muscles.

(2) Deficient tone of the entire displaceable segment of the pelvic floor and slackening of the loose tissue around it. This includes the bladder, urethra, and vaginal walls.

(3) Intra-abdominal pressure.

The conditions found in a case of advanced prolapse are given as : *Primary* (1) Perinæal body usually torn, and perinæal union of the levatores ani, transversi perinæi, and bulbo-cavernosi also torn to a greater or less extent; (2) Increase of intra-abdominal pressure; *Secondary* (3) Congestion with areolar hyperplasia of uterus, pubic segment, and posterior vaginal wall, laxity of everted vagina; (4) Separation of anterior rectal and posterior vaginal walls, and of vagina and bladder, from their lateral relations, with peritoneum clothing the separated surfaces.

These secondary lesions, especially the last, are serious and incurable according to Hart and Barbour, who say that in order to restore the pelvic floor to its pristine state it is necessary (1) to repair the perinæal body and narrow the vagina; (2) to restrain increased abdominal pressure—these are said to be possible; (3) To do away with congestion and areolar hyperplasia is probably beyond our power, while (4) to bring about adhesion of the anterior rectal and posterior vaginal walls, and

to restore the lateral supports, is impossible according to these authors.

Now the methods of surgical treatment in vogue (I am omitting tonic treatment, pessaries, massage, percussive and electrical manipulations) are as follows :—(1) Forming an inferior point of support from the vaginal wall, the vulva, or the perinæum; (2) Raising the uterus by shortening the round ligaments; (3) Suture of the uterus to the adjacent parts (hysteropexy vaginal or ventral); (4) Hysterectomy.

The adjuvant operations are (1) Curetting; (2) Amputation of the cervix uteri; (3) Removal of a wedge from the uterine wall, generally anteriorly.

These headings give some of the leading points in uterine prolapse and its treatment, and as they are taken from Hart and Barbour, Pozzi, Winckel, and Dührssen, they may fairly be considered to reflect modern gynæcological opinion. Taking the treatments all round there is only one striking difference between English and foreign methods, and this consists in the much greater application of Thure Brandt's procedures abroad before proceeding to cutting operations.

My object in writing this short paper is not so much to point any new operation as to draw attention to a combination of operations which, with other steps for restoring tonicity of the parts, and decreasing the abdominal pressure, constitutes as real a radical cure of sacropubic hernia as the so-called radical cures of other herniæ. It has occurred to me that I can do this best by discussing the table drawn up by Hart and Barbour.

As they point out, in a case of advanced prolapsus uteri, we generally find the perinæal body torn, and the perinæal union of the levatores ani, transversi perinæi, and bulbocavernosi destroyed to a greater or less extent. The vagina is also dilated. These conditions can be remedied by repair of the perinæal body and narrowing of the vagina (Elytrorrhaphy).

Without detracting from the importance of the perinæal body, it is necessary to remember that in the 3rd degree of laceration (into the rectum) prolapsus uteri is very rare, since the rectum

empties itself without any straining and consequent increase of the intra-abdominal pressure, and this fact proves that the main cause of prolapse is defective support of the anterior rectal wall and the resulting increased intra-abdominal pressure required to evacuate the bowel. It also explains the usefulness of the old ball pessary, which gives a *point d'appui* to the rectal wall and lessens the angle of curvature between the 2nd and 3rd subdivisions of the rectum. In order to decrease the intra-abdominal pressure, the essential points are attention to the diet and the use of aperients with great solicitude for regular evacuation of the rectum without straining. It is probable that massage of the uterus may owe much of its results to the attention given previously to the rectum and to the improved intestinal tone. General muscular exercise does good by increasing the muscle tone, and especially by favouring a better carriage and greater inclination of the pelvis, whereby the pelvic floor has less weight superimposed upon it, and this weight is thrown more upon the pubic arch and Poupert's ligaments and other fasciæ and muscles. The use of a belt is recommended, both because it supports these parts and also for the feeling of security and ease which it gives, thus promoting a better carriage of the trunk. To say that it is probably beyond our powers to do away with congestion and areolar hyperplasia of the uterus, pubic segment of pelvic floor and of the posterior vaginal wall, is perhaps correct, but only so because in practice the necessary time and trouble are not taken for the attainment of these aims. Curetting and amputation of the cervix assist the endeavours, but a correct position of the uterus and a normal direction of its ligaments carrying the vessels and lymphatics will do much to enable natural recovery from these conditions. The last conclusion of Hart and Barbour is, however, to be attacked the most. It is said to be impossible to bring about adhesion of the anterior rectal and posterior vaginal walls, and to restore the lateral supports. "Prolapsus uteri is therefore a condition with serious and irremediable secondary results." The use which a certain portion of the medical profession will make of this is

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evident, and I consider that this idea has much to do with the apathy displayed in the treatment of uterine prolapse, almost as much, perhaps, as the use of perinæal operations alone to effect a cure, which had a delusive external appearance of success, whereas it left the uterus sitting on the perinæum ready to dilate the vaginal outlet, and still setting up nearly all of the old discomforting symptoms.

It may be advisable, when we are informed that we cannot attain a certain object, before making efforts to circumvent the impossibility, to ask ourselves whether it would avail us anything if we were successful in our attempt. I think we are justified in neglecting the want of adhesion of the posterior vaginal to the anterior rectal wall, because there is no proof of its being of any but the least importance in supporting the herniated structures. [How little support the uterus gets by its anterior and posterior surfaces may be fairly seen in a sagittal section of the pelvic cavity. This is given on page 35 of Hart and Barbour's book, Fig. 33 (from Braune). It is here seen that below the anterior and posterior peritoneal folds there is a prolongation of very loose extra-peritoneal connective tissue which practically renders any anterior or posterior support of the uterus of little account.] When the dictum refers to the impossibility of restoring the lateral supports of the uterus, it is overstating the case; and, using the words in their surgical sense rather than absolutely, one can truthfully speak of restoring the lateral supports of the uterus.

Westermarck's double lateral kolporrhaphy, when carried somewhat deeply into the cellular tissue of the broad ligaments in the lateral fornices, gives practically complete restoration of the lateral supports of the uterus. Pozzi points out that the superior ligaments of the uterus (peritoneal and round) serve more for orientation of the uterus than for its support. Still it must be evident that by keeping up the normal position of the uterus they afford it great protection and support, by placing it in the most favourable state for receiving pressure from the abdominal cavity and by preventing the uterus from obstructing the rectum, and thus causing great increase of abdominal pressure during the expulsive efforts of defæcation.

For the renewal of the action of these ligaments we have no direct means, although various operations have been performed upon them. But by vaginal fixation of the fundus and the subsequent improvement in the muscle tone of the pelvic viscera, we obtain practically a complete renewal of their action. The great support called into action by this operation is that of the pelvic fasciæ in those parts where these run directly into strong bony insertions, and thus give a complete support by short, dense, fibrous tissue with a perfect basis of attachment. Dührssen has used his method of vaginal fixation combined with anterior kolporrhaphy and perineorrhaphy with success; but it seems more advantageous to use double lateral kolporrhaphy, carried upon the cervix, instead of anterior kolporrhaphy in this combination. It would be tedious to describe all the steps of the operations in the procedure, and for these I must refer the reader to Dührssen's Manual. The following points may however be of interest.

The operation is and must be considered an abdominal section, and all the precautions should be used which are usual in such cases. The patient is placed in the lithotomy position, and Clover's crutch is used. The operator then performs the combination of operations in the following order:—Curetting of the uterus, application of caustic to endometrium, and washing out of uterus. This is not always imperative, but it is good practice to make a regular custom of doing it. After curetting, the operator and his assistant re-disinfect themselves and the genitals of the patient. Vaginal fixation is carried out as far as the inserting of the sutures; then double lateral kolporrhaphy is performed and the continuous silk suture tied, after which the sutures for vaginal fixation are tied. Perineorrhaphy is performed by Lawson Tait's method.

In some cases of small vaginal capacity it might be very difficult to combine the vaginal fixation and double kolporrhaphy, and here ventral fixation would afford an easy escape from the difficulties, and this method of fixation would be generally preferable when, from any cause, the operator has opened the abdomen ventrally.

The sutures are of the finest silk for the lateral kolporrhaphy, and these are passed continuously. They remain, or, if left long, may come away with a little pulling. Silkworm gut sutures are used for the vaginal fixation and the perineorrhaphy. The sutures in the perineum are removed after a month and the fixation sutures after six or eight weeks, when the perineum will allow of a small-bladed Sims' speculum being introduced.

This combination of operations involves a considerable expenditure of time, but, with practice, the duration becomes greatly reduced. The operations are without shock, and the first two divisions do not require deep anæsthesia. If it entirely fails, the patient is left in the same condition in which she was before the operation. Nothing but a little vaginal mucous membrane has been removed. Mr. J. W. Taylor has found double lateral kolporrhaphy to be very successful in most cases of prolapse, and I have performed it in three cases with every satisfaction to the patient and myself. But this operation cannot bring about the normal condition of anteflexio-version of the uterine body, and hence the fundus uteri must still press upon the rectum and the pelvic veins, causing straining at stool and keeping up the congestion and areolar hyperplasia of the pelvic viscera.

Vaginal fixation places the fundus in its normal position for all practical purposes, and at the same time cures the cystocele almost always present, by the drag of the fundus upon the anterior vaginal wall. If, then, perineorrhaphy be superadded and the perinæum be carried well forward, the radical cure seems gained indeed, since the preliminary descent of the anterior vaginal wall, should this organ tend to become lax, is prohibited.

Perhaps it will be well to repeat that with asepsis, total failure of this operative method leaves the patient in *statu quo ante*; whilst success renders the patient once more a perfect woman, thus proving that the title of the paper should be conservative cure of uterine prolapse.

REPORTS OF CASES.

BY DR. E. T. WILSON, CHELTENHAM.

The two cases which form the subject of the present notice have much in common. In each there was a neurotic history; in each, life had been despaired of in youth; in each the epileptic symptoms which developed later gave little hope of a career, or a middle age of hard and fruitful brain-work. For both there was the same exciting cause of illness in a severe and sudden mental shock acting upon a highly strung nervous system.

In the first case, the history told of a father who had died young in India, the mother belonged to a long-lived stock, and herself died at an advanced age, retaining her physical and intellectual activity to the last. Of the brothers and sisters, four in number, all, except one, would be described as "nervous." The subject of this notice had always been wanting in vigour, and remarkably thin, with sallow complexion and jet black hair and eyes. He was subject to bilious attacks, and there was an obscure history of an epileptic seizure in early life. Work was not pressed at school, and when he left, his general physical condition was so unsatisfactory from nerve trouble—that a voyage to Australia was recommended. This resulted in a marked improvement, but it was not for some years after his return that he was considered strong enough to resume his studies, and he was nearing 30 before work was begun in earnest. Then a serious disappointment and mental shock occurred which affected him deeply. A few days afterwards he was carried out of church in an unconscious condition, unaccompanied by convulsions or other epileptic symptoms, and, on recovery, complained of severe pain at the back of the head, for which various remedies were used with but slight relief. The pulse rate varied from 44 to 48 in the

minute. A day or two after the attack he was removed home (Oct. 20th). The exhaustion was alarming, the tongue covered with dense brown sordes, the breath indescribably foul, pulse very feeble (80), temperature 96·8 F., pupils large and sluggish, bowels costive, pain at the nape of the neck (described as intense) and shooting down the spine like an electric shock as far as the lumbar region, resting there a moment, and then shooting upwards to the neck; very sensitive to light and noise. One tender spot was detected to the left of the spine on a level with the last dorsal vertebra. Sleep was broken and uneasy; urine normal, and continued so throughout the illness.

October 27th. During the week prostration had increased, and the respirations were often as frequent as 60 to 80 in the minute; temperature slightly below normal, and pulse 80. There was general hyperæsthesia, especially in the region of the spine, where the slightest touch of the hand was described as unbearable. Micturition and swallowing were difficult.

During the next fortnight the condition showed no sign of improvement. Sensitiveness to noise had increased, so that the least movement in the room caused him to scream out. The slightest exertion is followed by faintness. Unless moved with the greatest care, the pain in the spine is acute, and pins and needles occur in the legs and arms. If the leg is flexed, pain follows in the spine, and on straightening it again, the back "feels as if it would break." Feeding was a difficulty, there being no relish for any kind of food with the exception of Devonshire cream, which was eaten in large quantities.

Towards the close of November, or about a month from the first seizure, some intervals of ease were experienced, lasting for an hour or more at a time. The appetite, from being *nil*, became voracious, and—in spite of two relapses, when the alarming prostration returned without any apparent cause—convalescence went on steadily to the close of the year. On January 5th he was able to walk across his room, and early in February was sufficiently recovered to go away for change of air.

After a summer's rest he felt well enough to resume his studies, and all went well until September 27th, when he was again suddenly seized while at work in his class, and fell—this time with a scream—insensible to the ground. There was no struggle or other evidence of epilepsy. The medical man who saw him informed me that the pulse was almost imperceptible, respiration quick and laboured, and a short time after the attack vomiting occurred. There was, as before, intense pain at the nape of the neck, extending down the spine and to the heels. The breath became extremely offensive, and there was much difficulty in swallowing. In a few days he was removed to his home, and it was found that the symptoms of last year's attack had returned with increased severity. There were however some variations. Constipation was a marked and troublesome feature; enemata had to be given constantly, and brought away large scybalous masses of immense calibre, which were passed with great pain and difficulty.

During October the prostration increased and the spinal pain continued. So great was the exhaustion that simply turning him in bed caused him to faint away. By the end of November he had literally become too weak to make the exertion of swallowing, his temperature was 96·8, his pulse 80 and scarcely perceptible. It seemed as if he must die of inanition, as he had become a mere skeleton. Still there was no appearance of a bed sore. Nutritive enemata were now given at regular intervals—eggs with raw meat pulp, port wine, milk, pepsin, etc. All was absorbed, and this form of nutrition, with a minimum of food by the mouth, was continued uninterruptedly for a period of four months.

On December 14th the emaciation was so great that it was deemed advisable to get him on to a water bed, and, notwithstanding the utmost care, all present thought we had killed him in the process. The daily making of the bed, in which I personally assisted, was invariably attended by a dead faint.

On December 28th total anæsthesia was noticed in the right leg from the knee downwards. There were no other paralytic

symptoms. No material change took place up to March the 1st, when the nurse found him in the night convulsed, making a choking noise, lying on his face with the mouth buried in the pillow. He appeared quite unconscious, but soon awoke with violent palpitation of the heart and faintness. This was the last serious attack of exhaustion, and from that time improvement slowly set in.

During April, May, and June he took food by the mouth in increasing quantities ; but it was October, a year from his second attack, before he could walk across his room. A month or two later and he was well.

It is now sixteen years since these notes were written, and although the subject of them has recently succumbed to an attack of pneumonia, there was no return in all these years of the serious nerve disturbance. His physical and mental vigour returned, and, though always thin and sallow, he led an active intellectual life, married, and his children as yet show every appearance of health.

I have said nothing of the treatment, for although everything imaginable was tried—drugs, ice-bags, hot bags, constant current, massage—nothing seemed to bring relief to the pain, except, perhaps, belladonna internally and a blister now and again ; morphia hypodermically was ill borne. Perseverance in feeding seemed to give the only hope, and in the end it proved successful.

The second case is that of M. H., an undergraduate aged 24. The father had been obliged to give up professional work for a time owing to "brain exhaustion ;" the mother, very delicate herself, and belonging to a phthisical family. There were two children, one of whom had died in infancy from convulsions.

The survivor had also suffered from convulsions when young, and at 12 years Sir Benjamin Brodie and Dr. West were consulted about him. They concurred in thinking that he had tubercular disease of the brain, and that permanent recovery was hopeless. He *did* recover, however ; and though not pressed at school, as over-work brought headache, he gained

credit for himself, and took a good position at the University. After his first term he experienced a great mental shock in the sudden death of a friend and school-fellow. At the funeral, which he insisted on attending, he appeared as in a dream, and spoke to no one. On returning home he went to bed and took no notice of anything or anybody for some days. It was at this stage that he came under my care.

November 7th. He was very restless, and averse to talking about himself or indeed on any subject. The right pupil was larger than the left, oscillating, and insensitive to light. Pulse 80, irregular. A large patch of ecchymosis was noticed over the right eye, with excessive tenderness of the scalp. There were headache and constipation.

During the next week or so he was often excited, with the senses abnormally acute. Headache, nausea, occasional faintness, and vivid dreams almost amounting to illusions. The pulse varied remarkably, from 115 to 60 within a very short period. Urine normal.

On December 17th an attack of intense pain in the head was followed by general convulsions and afterwards by stupor. From this time to January 16th the symptoms continued much as they had been before this attack, with the addition of asomnia. For ten days there had been on an average one hour of sleep each night in spite of remedies. It was decided to try morphia, and a quarter of a grain was injected, with the greatest relief to the headache. Sleep also was obtained. Headache returned daily however, and morphia was required in increasing doses, at first once and eventually twice in the twenty-four hours.

On March 14th violent excitement suddenly came on, during which he threw anything near him at those in the room, and ended in a well-marked epileptic seizure. Morphia ($\frac{1}{2}$ gr.) injected in the arm acted at once like a charm in composing him.

On April 7th and 8th there were convulsive seizures with coldness of surface, constriction of the throat, and intense

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headache; and these were continued at intervals throughout the summer. They were brought on by any emotional disturbance, and were preceded by a dusky appearance of the face. The morphia invariably brought complete relief within eight or ten minutes, but it had to be given morning and night, and in increasing quantities. A grain was now required to obtain the desired relief. He was irritable and impatient, a great contrast to his character in health.

In October—nearly a year from his first seizure—his worst attack occurred. When talking quietly to his mother he suddenly asked, with eyes flashing, "Who are you? who sent you?" Then agonising pain sufficient to make him shriek out (he was usually most stoical in endurance) followed, and general convulsion with opisthotonos. The pupils were widely dilated. Pulse 122, thin and wiry. Scalp hot and perspiring. Spasm of the glottis, with sensation of choking. No complete loss of consciousness. Morphia ($\frac{1}{2}$ gr.) brought relief in half an hour.

On another occasion, while talking as before to his mother, he suddenly uttered an oath (quite contrary to his habit) with a savage look, and then resumed the conversation as if nothing had happened. In another seizure a violent attack was made upon myself when I entered his room, and it was with difficulty that I got him into bed again and injected the morphia. The attacks of cranial neuralgia, attended by epileptiform seizures, had now lasted a year. The only respite from pain was won by morphia; but the temporary relief it brought was complete, so that reading and study were carried on in the intervals. The nights were variable—some good, others restless. Food was taken fairly well. The temperature was generally about normal.

For the next twelve months the symptoms continued much as before. Headache of great intensity, and referred generally to the whole cranium, recurred daily, and was only kept in abeyance by morphia injections twice, often three times, in the twenty-four hours; and the quantity had gradually to be increased until gr. iiss. were used at each injection. No other effect was noticed from the injection beyond the rapid sub-

sidence of the pain. In this it acted like a charm. Periods of stupor were frequent in the afternoons, during which he would notice nothing ; these also were relieved by the morphia.

The convulsive attacks, with often a wild delirium, occurred from time to time, and generally in consequence of some disappointment or worry. On one occasion he was found unconscious and drawn up in a heap between the bed and the window. The right side of the scalp was puffy and tender ; and on recovering consciousness there was the intense pain in the head. Not unfrequently the pain returned in the night after the evening injection of morphia, and an extra dose had to be given. I need not say that every possible drug had been tried for the relief of the symptoms, but in vain ; and the severity of the pain was such that nature must soon have given way under the strain if some relief had not been obtained. The respite, however, was so complete that study of the severest kind was carried on during the intervals of freedom from pain, and the intellectual work so done formed the foundation of a career of the highest distinction and usefulness.

November. A third year of constant suffering had now been entered upon, and there was little change. An attempt was made to reduce the diurnal morphia injection of gr. ii. $\frac{4}{5}$, but there was such aggravation of the pain that the full quantity had to be continued. The attacks of convulsion were less frequent, but quite as severe when they occurred. On one occasion an attack of cataleptic stupor came on while raising some bread to the mouth, and for six minutes by the watch his hand was held out in a constrained position. Eating was then resumed as if nothing had happened. The following note at the close of the third year shows that there was little change in the condition :—"Called up at 3 a.m. Intense pain in head, no convulsions ; pulse 120 one minute, 90 the next ; extremities ice cold. Injected morph. gr. iii. ; relief in one hour complete. There is now seldom remission of pain after morphia for more than an hour or two. Constant nausea and little sleep."

November. The fourth year showed little improvement

until near its close. There were the same epileptiform seizures, the same persistent headache relieved by morphia, which was being very slowly reduced. The special senses were affected from time to time. Sparks of fire were frequently seen with closed eyes. Sounds as if an engine were blowing off steam close by, and a nauseous smell, were often complained of.

November. The fifth year was now commenced with a slow but steady improvement in the symptoms. The headache continued, but with longer intervals of ease, so that the patient was able to work in the afternoons and evenings. He began to get up and to take drives and walks. The convulsive attacks had ceased, but there was much nervous irritability, and morphia had still to be given twice daily—gr. $\frac{1}{2}$ in the morning, and gr. $\frac{2}{3}$ at night.

Improvement continued during the early months of the sixth year of illness, and he was well enough to go for a trip to Scotland. The morphia was gradually reduced to a single dose (gr. $\frac{1}{2}$) at mid-day, but this was not accomplished without much suffering and the determined exercise of a strong will. Regular work had now begun, interrupted by occasional headaches and sleepless nights, for which twenty to thirty grains of chloral were found useful; but morphia was continued in slowly decreasing doses, and it was not before the commencement of the seventh year of illness that it was finally given up. For six years uninterruptedly it had been injected on an average twice daily, and no ill result ensued. On the contrary, the attack, whether of violent convulsion, stupor, or agonising pain, yielded invariably to the remedy within a short time, and a respite was obtained which was put to the best of uses in qualifying him for his future career. Years of study and of extensive travel followed upon convalescence, during which morphia was occasionally but guardedly used when headache was intense. Literary work of the most absorbing kind, including leader-writing for the Press, was engaged in, and for ten years health was maintained. Then came a breakdown from over-work, intense nerve prostration with irritability of spine, but no symp-

toms of an epileptic nature, and for a week or two recovery seemed hopeless; yet in a month he had sufficiently recovered to travel, and literary work was soon resumed. A further term of ten years has elapsed since then, during which appointments of great responsibility have been filled with distinction; and now another rest has been required by an overtaxed nervous system. There has however been no return of the serious symptoms which threw such a shadow over the early years of life, and it seems probable that rest will soon again be followed by work.

It is difficult to determine whether the treatment had any other than a temporary and transient effect upon the disease, but it is not unreasonable to suppose that the repeated suppression of the nerve storms led to a diminution in their strength and frequency, and finally to their extinction. In any case, the fact that the prognosis in two such cases as those just described could be so falsified by the result, may serve as a caution against the too positive expression of opinion, and at the same time encourage a more hopeful outlook in cases with a similar origin and course to those which have been described.

TWO CASES OF APPENDICITIS WITH UNUSUAL SYMPTOMS.

BY W. COLLIER, M.D., F.R.C.P.

PHYSICIAN TO THE RADCLIFFE INFIRMARY, OXFORD.

A. B., male, æt. 35. Illness commenced in early part of April, 1895, with pain over the epigastric region and attacks of vomiting. Food did not in any way seem to influence the pain. Two weeks later, patient began to be troubled with daily severe rigors and profuse perspiration.

On May 2nd seen in consultation for first time by myself, when the patient's condition was as follows:—He looked very ill, very sallow complexion, with slightly jaundiced tint of sclerotics. Pulse small and rapid. Temperature normal. Increased

resistance, with tenderness, over upper 3rd of R. rectus muscle. Nothing discovered in abdomen.

A week later, when seen again, patient was evidently worse. The rigors and sweats had continued. Temperature at time of examination 102° F. Great rigidity of the upper 3rd of both recti muscles, with marked tenderness.

Three weeks later, in consequence of marked increase of hepatic dulness and tenderness, liver was aspirated, and small quantity of pus drawn off. Patient obtained no relief, and died in the course of twenty-four hours.

At the *post mortem* examination the liver was found to be riddled with pyæmic abscesses, secondary to perforation and gangrene of the appendix.

Remarks.—In this case, although the patient was watched almost from the outset of his illness by an exceedingly able practitioner, and seen in consultation by at least two other medical men, no suspicion of appendix trouble ever suggested itself, and the true nature of the case was only cleared up by the autopsy.

C. D., male, æt. 20. On August 16th, 1894, after returning from the river, was seized with a severe pain in the abdomen. Could not localise the pain; no vomiting.

On the 19th, as the pain had continued, was seen for the first time by a doctor. On this day patient had a very severe rigor, followed by a drenching perspiration, temperature running up to 104°. The next four or five days had a daily severe rigor, the abdominal pain continued, vomited once on 22nd.

On the 24th, when I saw him for the first time, patient was evidently desperately ill, and all the symptoms pointed to general peritonitis. He was noticed to be slightly jaundiced. Operative interference was discussed and declined.

From this date onwards the rigors continued, patient became intensely jaundiced, sickness set in, and death supervened on the 29th.

A hurried examination of the body was permitted while in the coffin. On opening the abdomen, general peritonitis was

present, and a gangrenous appendix with perforation found. The liver and other organs were not examined.

In this case the absence of localising symptoms, the absence of vomiting in the early stage, the severe rigors, and intense jaundice were points of special interest.

IDIOPATHIC TETANUS : RECOVERY.

BY W. A. MARRIS, M.B.,

HOUSE PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

S. V., a boy 16 years old, was admitted into the General Hospital, Birmingham, under Dr. Rickards, on March 27th, 1895.

His parents stated that, though a weakly boy, he had had no serious illness until the present, which began one afternoon, a week before admission, with pains in the head and shoulders and slight feverishness. The following morning he was flushed and sweating profusely. He complained of stiffness and pains all over, but especially in the neck. He could not swallow solids, but could open his mouth sufficiently to put out his tongue partially. On the third day, in addition to the stiffness, he had general twitchings, and on the day before admission had an attack of convulsions.

When first seen at the hospital, he was lying on his back, which was arched. The body, from head to feet, was so rigid that by raising the heels the whole body might be lifted *en masse* from the head. The arms and hands were least affected. The jaws were locked, but could be sufficiently opened to allow of the tip of the tongue being protruded. There was constant pain throughout the whole body, and frequent painful twitchings passed down the trunk and limbs. Sensation was unimpaired, and he was conscious and intelligent. His face was flushed, and perspiration was profuse. The temperature was 100°, respirations 30, pulse 104, urine normal. No injury or history

of injury could be made out. He had an enema, containing half a drachm of chloral hydrate, which was repeated some six hours afterwards.

March 28th. Slept under the chloral. General rigidity much the same. Twitchings continue and increase in frequency when patient is examined, but are not excited by slight stimuli. Patient can only take fluids, and these very slowly. Had an attack of severe spasms for a few minutes, which caused great difficulty in respiration, during which there was lividity of the face, paralysis of sphincters, and some relaxation of the tetanic spasm.

March 29th. Muscles less rigid; had severe spasm, causing much difficulty in respiration, lasting five minutes.

March 30th. Twitchings more severe, and rigidity increased.

March 31st. Another attack of spasms occurred this evening. The chest was fixed in the position of extreme inspiration, and convulsive attempts at further inspiration were made, but no air entered the chest. The face was livid purple and patient profusely sweating, with failing pulse. Amyl nitrite vapour was administered, and the spasm gradually relaxed; but artificial respiration was required before the patient fully recovered. The attack lasted ten minutes. A second longer and worse attack occurred at night, which was only relieved by complete chloroform narcosis.

Similar attacks of spasm occurred on April 1st, 2nd, 4th, 5th, 6th (two attacks), 9th, 10th, 11th, 12th (two), and 13th (two). They all presented the same features—inspiratory spasm, with convulsive attempts at further inspiration, and lividity, followed by gradual relaxation, profuse sweating, passage of urine and fæces into the bed, with failing pulse, and cessation of all attempts at respiration.

They were all treated alike, by inhalation at first of amyl nitrite and, when the relaxation allowed of it, by artificial respiration, followed by chloroform to prevent recurrence. On one occasion the spasm was allowed to take its course till the increasing failure of the pulse and entire absence of respiratory

effort absolutely compelled interference, and artificial respiration was used.

The attacks were frequently induced by attempts to drink, and from April 8th to 13th by the collection of mucus in the trachea from bronchitis which had developed, the rigidity of the chest preventing efficient coughing. Between the attacks the general condition varied little from that on admission, the pain being rather less, but the rigidity and twitchings not materially diminished. The boy's strength was failing, and he had lost much flesh.

The treatment had, so far, consisted of five-grain doses of chloral hydrate every four hours, with occasional larger doses when the symptoms seemed to require it. There being no signs of marked improvement, antitoxin from the British Institute of Preventive Medicine was administered. One gramme of the dried serum dissolved in water was injected into the left thigh in the evening of April 12th. During that night two of the severe spasms mentioned occurred. A similar dose was given the next evening, and was followed during the night by two more spasms of less severity. The patient was in great distress this night for several hours from this inability to cough up mucus which had collected in the trachea. In the morning the general condition had improved; the rigidity was less, and the twitchings, though frequent, were not so severe as before. The trismus was distinctly lessened. Another gramme of antitoxin was injected middle-day on the 14th, and a fourth gramme the same night. The following day the improvement was maintained, and for the first time patient took bread and milk and pudding. As he was now improving, no more antitoxin was used, but chloral was still being given. On April 17th chloral was omitted for a time, and was followed by a distinct slight relapse.

From the 18th onward all twitchings ceased, and the muscles relaxed gradually and equally throughout the body, but the trismus was last to disappear. For several days longer there was difficulty in effectually clearing the throat of phlegm.

On April 24th a pink, papular, irritable rash appeared on the cheeks. On the 26th it spread to the arms, and the temperature rose in the evening to 102.8° . The following day there was sore throat and severe *malaise*, with pains in the shoulders and knees, and the rash was more marked. The temperature in the evening was 104° , and a few twitchings had recurred, with increased rigidity throughout. The sore throat and articular pains continued for a day or two, and it was not till May 1st that the temperature became normal. Emaciation had become extreme.

From this point recovery was uninterrupted. For the first week after admission the temperature averaged 100° . After this it was normal, except for a short period when antitoxin was being given; it then reached 101° for a few hours. The febrile attack of April 29th appeared to be of a septic nature. There were considerable pain and irritation at the site of the antitoxin injection. The pulse-rate was about 104 per minute so long as the temperature was raised, and subsequently 84; the respirations were usually 30 per minute. The daily amount of urine measured 30-35 oz., spec. grav. was 1.041, the reaction alkaline. It contained no albumen, but deposited phosphatic crystals. The bowels were constipated throughout.

CASE OF ANGEIO-NEUROTIC ŒDEMA, WITH URTICARIA.

BY JAMES W. RUSSELL, M.A., M.D., M.R.C.P.

Herbert E., aged 25, came to my out-patients on April 17th, 1895, complaining of swelling of the face and of one arm, of a fortnight's duration. The feet had been swollen, but were then free from œdema.

On examination, there was marked swelling under the left eye and all over the forehead; the left hand and forearm were also very œdematous. There was a history of rheumatic fever,

six years ago, and a mitral systolic murmur, heard well in the axilla and posteriorly; but the heart was beating slowly and regularly. There was no albuminuria.

From its distribution and the history of a temporary swelling of the feet, I thought that the œdema was probably of a nature allied to that of urticaria. The mitral disease had clearly nothing to do with the symptoms, although the history of rheumatism, if anything, rather supported the diagnosis. On the following day this opinion was confirmed by the complete disappearance of the œdema from the left arm and its transference to the opposite side, the swelling of the face remaining much as before. There were now, however, large patches of urticaria all over the back and shoulders. Two days later, the œdema had left the arms and face altogether and appeared in both feet, but there had been no more urticaria.

On April 25th the patient reported that he had been free from all swelling for two days; but immediately afterwards the trouble returned and continued for several weeks, at the end of which time he ceased attending.

No method of treatment appeared to exercise any influence over the œdema. At the time of its temporary disappearance the patient had for several days been taking soda baths, which I have found useful in obstinate cases of urticaria; but the return of the swelling, and its persistence under the same treatment, proved that no credit could be allowed to it in this instance.

A CASE OF RHEUMATIC FEVER, WITH UNUSUAL COMPLICATIONS.

BY W. T. FARNCOMBEE, M.D.

ON April 21, 1894, I was asked to see Miss W., æt. 30, stated to be suffering from rheumatism. Her previous history included two attacks of rheumatic fever, the last about five years ago, and

eight years ago she had been in the Soho Hospital for Women with a pain in the right side of the abdomen. No operation was performed.

On examination I found Miss W. pale and anæmic. She had during the previous fortnight felt "rheumatic" pains in various joints. On the day before her present illness she had been "shivery" and had pains all over, but especially in the back and the right upper limb. The right elbow and the small joints of the right hand were swollen and tender. The tongue was coated with a dry brown fur. The temperature was 102.4° F. and the pulse 140. No cardiac lesion could be discovered. Perspiration was copious and offensive. Fifteen grains of salicylate of soda were given every three hours, and on April 22 the pain had markedly subsided. The swellings were less and the fever was lower. On April 25 the patient began to menstruate, the period lasting three days. On April 26, deglutition became painful and speech difficult. The temperature rose from normal to 100° F. and the tonsils were found to be covered with superficial white patches. On the uvula, soft palate and on the hard palate were several separate circular patches apparently similar to those on the tonsils. The throat was painted with a strong solution of silver nitrate and an antiseptic spray frequently applied. Under this treatment it rapidly cleared. On April 28th, the temperature, morning and evening, was again normal and patient seemed in every way much better. On April 30th, she complained of colicky pains in the abdomen, which disappeared after an action of the bowels, but on May 1, I found her anxious-looking and feverish, with a small rapid pulse and very great general abdominal tenderness, which was most marked in the right iliac region. There was no dulness anywhere in the abdomen. Vomiting and dysuria were present and the bowels acted very frequently, only a small amount of fæces being voided each time. A very slight menstrual loss commenced again and lasted three days. On May 2, Dr. Wade kindly saw Miss W. with me. The conditions were the same as on the previous day, but the temperature had

risen to 101°6. He concurred in the opinion that peritonitis was present. Under the use of opium and the local application of hot fomentations the patient quickly improved, but on May 7, the temperature rose and the right tonsil was found to be again covered by a white patch. After being painted several times with nitrate of silver this cleared once more and thenceforward convalescence, though slow, was uninterrupted.

REVIEWS.

LEPROSY IN ITS CLINICAL AND PATHOLOGICAL ASPECTS.*

THIS book is an important contribution to the literature of leprosy. There is nothing in it which serves to distinguish the respective parts taken by the authors in its preparation, but we may safely take it as principally an exposition of the views held by Dr. Hansen, a leading authority on the subject. Of the actual merits of Dr. Walker's translation, from the point of view of its accuracy in reproducing the original, we have no means of judging; but we may at once say that in all other respects his part of the work has been admirably done.

Any criticism of the account of leprosy here given, whether clinical or pathological, must obviously be out of the question to the great majority of English practitioners. We have ourselves seen but one case; and probably there are not many of our readers who will have a much more extended experience of the disease. We can therefore but attempt to give a brief outline of a few of the points dealt with.

* Leprosy in its Clinical and Pathological Aspects. By Dr. G. Armauer Hansen, Inspector-General of Leprosy in Norway, and Dr. Carl Looft, formerly Assistant Physician to the Lungegaards Hospital. Translated by Norman Walker, M.D., F.R.C.P. Edin., Assistant Physician for Dermatology, Edinburgh Royal Infirmary. Bristol: John Wright and Co. 1895.

The two varieties of leprosy usually described—*Lepra Tuberosa* and *Anæsthetica*—are accepted by the authors as representing two well-marked types of the disease. The nomenclature of the latter, however, is criticised as failing to convey the idea that its anæsthesia is accompanied by any skin eruption which corresponds to the nodules of the former; and the title *Maculo-anæsthetica* is therefore suggested as giving a truer description of the condition, and as laying stress on the important affection of the skin met with in this variety. All other classification is avoided, on account of the tendency to distinguish as different types what are really but various stages of the same type and disease. Thus, for example, the so-called *Lepra Mutilans* is simply described as the late stage of the “maculo-anæsthetic” variety.

The characteristic nodules of *Lepra Tuberosa* are met with first and most frequently, according to the authors, on the face and back of the hands and wrists, and are seen successively less frequently on the extensor surfaces of the limbs, the back, nates, flexor surfaces of the extremities, breast, abdomen, scrotum, and penis; and never on the palms, soles, or hairy scalp. Leloir, Unna, and others, however, maintain that though rarely seen on the palms and soles, yet these parts are occasionally affected, a difference of opinion which, in the case of Leloir at any rate, the authors maintain has arisen from a confusion between leprosy and syphilis. The nodules are almost always situated in the cutis, stretching the epidermis, but occasionally may be placed deeper in the subcutaneous connective tissue, in which case they are perceptible by the sense of touch only; and a warning is given of the necessity of running the fingers over suspected places before a negative decision concerning the presence of the disease is arrived at. Other features by which early and slight cases may sometimes be recognised are a characteristic change of colour in the face, which may be brought about by variations in temperature, and a deepening of the shadows over the eyes due to the early infiltration of the eyebrows. The characteristic affection of the face is well

described, and some excellent photographs of cases give a good idea of the peculiar appearances produced. The eyelids and eyes are almost always affected. The earliest sign that the disease has taken root in the eyes is a faint clouding of the upper part of the cornea, only noticeable at first by comparing it with the unaffected pupil; and to this is speedily added a spreading infiltration of the limbus conjunctivæ. Eventually the cornea becomes extensively affected in one of three ways: either by the growth of a raised nodule immediately under the epithelium, which covers the whole cornea; or by a less elevated wedge-shaped infiltration; or by the complete penetration of the cornea. Total blindness is the result in each case. The mucous membranes—especially those of the mouth, nose, larynx, and pharynx—may be affected by a uniform infiltration or by the growth of nodules; but it is worthy of note that, although the whole of the soft parts of the nose may ulcerate away, the bones themselves are never attacked. The nerves are affected in a later stage, especially those of the limbs, and these again to the greatest degree where they run superficially over bones or joints. The lymphatic glands are always enlarged, but do not suppurate. Finally, the testicle, liver, and spleen are usually attacked; and in addition, lardaceous disease of the organs, together with actual nephritis, are usually found *post mortem*. The authors are of opinion that death is rarely due to the disease itself, but usually to the organic changes just described.

In the *Lepra maculo-anæsthetica* the affection of the nerves throws that of the skin comparatively into the shade; but, as already stated, the latter is invariably attacked by the disease. In place of nodules, though as a rule in the same situation, various eruptions make their appearance, of which erythematous patches and yellowish or brownish pigmented spots are by far the most frequent according to the authors' experience: they add that the intercostal spaces are an especially favourite seat of the latter eruption. These patches are at first hypersensitive, but gradually become anæsthetic, and at the same time their centres lose their pigmentation and become white, presenting a

characteristic contrast to the red and somewhat raised edges which surround them. A photograph of a patient in this condition is included in the book. The symptoms of the accompanying extensive neuritis of the face and limbs are well known and need not be repeated; the trophic affections of the joints—allied to the Charcot's joint of locomotor ataxy—and bones are met with only in a later stage, the latter leading to those extreme mutilations which have been described by other authors as constituting a separate variety of the disease. The tendency is, as the authors insist, towards a final cure of the actual disease, but the resulting condition of mutilation, disfigurement, atrophy, and paralysis of muscles, emphasizes the mockery of the term.

The authors have nothing to say in favour of the identity of tuberculosis and leprosy, and maintain that there are unfailing and reliable pathological differences between the two diseases. These are, the absence in the case of leprosy of caseous degeneration of the nodules, and of giant-cells at all like those met with in tubercle; the richness of the leproma in blood-vessels; the absence of the long and curved organisms generally to be seen amongst a number of tubercle bacilli; and the arrangement of those of leprosy in clumps and masses. They do not consider that any reliance can be placed upon differences in staining in the two cases. The very frequent combination of the two diseases, however, is fully recognised; and tables are given at the end of the book embodying their own experience in this particular.

We are unable to give any summary of the chapters dealing with the pathological anatomy of the two varieties of leprosy. Many disputed points are discussed, on which the authors have decided views of their own. Thus the question as to the presence of the bacilli *in* the cells of the leproma receives a strong answer in the affirmative, in opposition to the belief held by Unna as to their limitation to the lymph spaces outside the cells; and the opinion of the same observer and Lütz, that the bacilli really consist of small rows of cocci, is strongly controverted.

Chapters on Etiology, Diagnosis and Prognosis, and Treatment, close the book. That on Treatment is an avowed summary of the views of the late Dr. Danielssen. All the numerous so-called specifics which have been suggested for the disease, from elephants' teeth down to Koch's tuberculine, are enumerated, and the more rational among them have all been carefully tried by that authority or his successors with an entirely negative result. The authors therefore conclude that although cures worthy of the name do undoubtedly sometimes occur in the early stages of the disease, yet it can hardly be claimed that treatment has anything to say in the matter. Isolation and good hygienic surroundings are all that can be recommended from this point of view.

SMELLIE AND HIS CONTEMPORARIES.*

It would be unfair to criticise this book from the biographical point of view; for, indeed, the life of Smellie does but serve as the starting-point of Dr. Glaister's history of midwifery in the eighteenth century. As much as possible has been made of the very meagre details known of the life of Smellie himself; but, in spite of all, the personality of the man remains shadowy in the extreme, and the author is unable to arouse any real interest in his subject. Short biographical sketches are added of nearly all Smellie's contemporaries, known or unknown to fame, who either had or could possibly have had any connection with him, or with his work in connection with the development of that branch of medicine to which he devoted himself.

The real interest of the book lies in its historical account of the progress made by the art of midwifery during the eighteenth century. With this progress Smellie had much to do, being

* Dr. William Smellie and his Contemporaries: a Contribution to the History of Midwifery in the Eighteenth Century. By John Glaister, M.D., Professor of Forensic Medicine and Public Health, St. Mungo College, Glasgow. Glasgow: James Maclehose and Sons. 1894.

responsible not only for great improvement in the construction and use of the midwifery forceps, but also for most important additions to the contemporary knowledge of the physiology and mechanism of parturition. A full account will be found here of all these matters, and, in addition, an interesting retrospect of the position held by midwifery and its practitioners at the time.

The book is well written and printed, and should prove of interest to those who concern themselves with the study of medical history.

KING'S COLLEGE HOSPITAL REPORTS.*

WE are glad to have the opportunity of congratulating the editors of King's College Hospital Reports upon the issue of their first annual volume. An institution which has reached the position held by King's College Hospital is undoubtedly incomplete without a yearly report as a record of its work and progress, and with a full appreciation of the difficulty which always attends the commencement of such an undertaking we accord to this volume the heartiest welcome.

Dr. Curnow, the Dean of the Medical Faculty, has written a prefatory historical sketch of the foundation and early years of the hospital, and his article will be read with great interest by all associated with the institution, and will prove of special value to King's men as it forms a complete and welcome record of the early struggles of this now famous charity.

In addition to the papers by the members of the staff there are reports of the work done in the general and special departments of the hospital, an account of the positions and welfare of the various clubs and societies associated with the college, and a section of special personal interest headed: "What old King's men are doing."

* King's College Hospital Reports, being the Annual Report of King's College Hospital and the Medical Department of King's College. Vol. I. (Oct. 1st, 1893—Sept 30th, 1894.) London: Adlard and Son. 1895.

Correspondence.

VASCULAR DEGENERATION OF THE VESTIBULE.

To the Editors of the BIRMINGHAM MEDICAL REVIEW.

Sirs,—Whilst I am bound to express my concurrence generally with the views of Mr. J. W. Taylor in his paper on the disease designated by him "*Kraurosis Vulvæ*," and emphatically to express the pleasure I have that he has so fully recognised my own work on this subject, I am bound to renew my protest against the adoption of the nomenclature (Breisky's) he uses; and I do this for many reasons.

In the first place, it is too much the fashion on the part of German authors to ignore the work of writers other than those of their own country; and though my description of the symptoms, pathology, and course of the disease had been fully published years before Breisky wrote about it, nearly twenty years ago, not a single reference to the fact has ever reached my eyes in a German work. Authors of Teutonic works have also a habit of coining inappropriate names, a habit well illustrated on the present occasion, and not sufficiently vindicated by Mr. Taylor. The word "*κραῦρος*," from which Breisky's name for the disease has been coined, is one without a single classic authority, and it is not one which ought to be used as a derivative. Mr. Taylor dignifies it as the opposite of "*μαλακος*," but it has no such significance. The latter is properly translated by reference to the softness of effeminacy; the former in its rare use in authors not of classic authority, means strictly "brittle," Hamilton's translation (used by Mr. Taylor) of "dry," "brittle," and "parched" being entirely unauthorised in the matter of the first and third words. If the word "*kraurosis*" (an impossible and illegitimate one) could be properly employed, the disease would be characterised by fissures, which it certainly never is, and certainly the surface affected is neither "dry," "brittle," nor "parched,"—quite the contrary in all three particulars.

In the second place, "Kraurosis Vulvæ" is certainly mistaken, as there are elements of the *vulva* which the disease never attacks; and it is very doubtful as to whether the vestibule ought to be reckoned in the *vulva* at all. I am strongly of opinion it ought not to be.

In the third place, "vascular degeneration of the vestibule," the name by which I originally described it, accurately gives the facts without any theorising on them; and it is neither pedantic nor clumsy, but in every way convenient.

Finally, as not a single fact has been added to my original description, and all my conclusions concerning the disease have been fully confirmed, it is not necessary to alter my nomenclature; neither is such a change in accordance with the usual custom observed in such cases.

I have also to point out that Mr. Taylor, towards the end of his paper, confuses this specific disease with the vestibular contraction due to senile change, an altogether independent condition, and one which occurs without the curious serpiginous spots of vascular degeneration, and without their special symptoms. This is one of the few ill-results which are occasionally met with after removal of the appendages, a characteristic example of which Mr. Taylor quotes from the experience of Mr. Christopher Martin. The process which leads to the vestibular contraction in the former case causes intense distress lasting many years, a distress only relieved permanently by the completion of the ring. The latter is one that is wholly painless, and to be met with in a distinct proportion, probably ten to twenty per cent. of all women over 60. After removal of the appendages its premature appearance is much less frequent, perhaps not more than one per cent. Certainly out of many hundreds of cases of removal of the appendages I am not aware of its occurrence in more than three or four of my patients.

LAWSON TAIT.

7, Crescent, Birmingham,

August 15th, 1895.

PUBLISHERS' DEPARTMENT.

We have been requested to insert the following notice:—

The American Electro-Therapeutic Association will hold its Fifth Annual Meeting at "The College of Physicians and Surgeons, of Ontario," in Toronto, Canada, on Tuesday, Wednesday and Thursday, September 3rd, 4th and 5th, 1895.

Dr. Emil Heuel, Secretary,

352, Willis Avenue, New York City, U.S.A.

By an error, Mr. J. M. Richards' "Lactopeptine Tablets" were, in our last number, described as "Tabloids."

New Books, etc., Received.

Medical Electricity. By H. LEWIS JONES, M.A., M.D., F.R.C.P., Medical Officer in charge of the Electrical Department at St. Bartholomew's Hospital. Illustrated. London: H. K. Lewis. 1895.

Wright's Improved Visiting List. By ROBERT SIMPSON, L.R.C.P., L.R.C.S.—two copies, one for 1896, the other arranged for perpetual use. Third Edition. Bristol: John Wright and Co.

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ANNUAL MUSEUM, BRITISH MEDICAL ASSOCIATION.

LONDON, AUGUST, 1895.

By far the most prominent exhibit at the Annual Museum of the British Medical Association, held at the Examination Hall of the Colleges of Physicians and Surgeons in the first week of August, was the artistic display of Burroughs, Wellcome & Co., of Snow Hill Buildings, London. Occupying as it did the central position in the central room, it arrested the attention of the visitor directly he entered, and a close inspection revealed the care with which it had been arranged.

This firm has fitted out every important British exploring expedition for many years, and it made a prominent show of the trophies of these highly satisfactory outfits. The chests, etc, brought back by Stanley, by Surgeon-Major Parkes, by Captain Stairs, by Julius Price, by Dr. Burland, and a host of other explorers and hunters of world-wide fame were on view. As an instance of what this firm is capable in the matter of compactness of medical outfits, a tiny medicine chest—the smallest in the world—was shown. It was about the size of a locket, and contained 500 doses of medicine. A great variety of unused medicine cases and chests, fitted with “Tabloids” of Compressed Drugs and adapted for every conceivable purpose, was exhibited.

The most interesting part of the section devoted to “Tabloids” was undoubtedly that in which preparations of organic remedies of animal origin were shown. Prolonged experiments proved the unreliability of the various processes for the preparation of extracts of animal organs, and now the “Tabloid” form is generally adopted for this class of medicament. The whole substance of the organ is thus secured, and the presence of the active principles assured. Clinical experiments made by leading physicians, and repeatedly published in the various medical journals, prove the reliability of these laboratory experiments. Among the better recognised “Tabloids” of animal substance prepared by this firm may be mentioned those of Thyroid and Thymus Gland, Supra-renal Capsules, Didymine, Cerebrine, Pituitary Body, Pineal Gland; bone medulla, ovarian kidney, and uterine wall substances.

In Burroughs, Wellcome & Co.’s bacteriological laboratory, in which the application of the “Tabloid” system to animal organs was worked out, a very important discovery was made. This firm was the first in Great Britain to prepare liquid Anti-Diphtheritic Serum for general supply to the medical profession;

and as some doubt was thrown on the keeping qualities of the liquid form of this substance, research was undertaken to ascertain whether the Serum could not be prepared in a dry form. After the expenditure of much time and trouble a method was discovered, and once more Burroughs, Wellcome & Co. were first in the field. As the result of their investigations, they now prepare a Serum of full potency and high concentration in the form of beautiful, golden, non-deliquestent, but readily soluble scales. These scales keep much better than the old liquid Serum, and are therefore well adapted for export to the tropics, and for physicians who wish to keep a supply of the Serum by them ready for emergencies.

In view of the proximity of another important exhibit—that of Fairchild Brothers and Foster, of New York—a little bottle in one of Burroughs, Wellcome, & Co's cases was of surpassing interest. This bottle contained some of the first pancreatic extract ever made, and was exhibited by Dr. George Harley at the Leeds Meeting of the British Association for the Advancement of Science, in 1857. At this meeting the learned doctor showed, for the first time, that pancreatin possesses within itself the digestive properties of saliva, gastric juice, and bile, being able to convert starch into sugar, dissolve albuminous substances, and emulsify fats. Unfortunately, his process for the isolation of active principles was too expensive for practical work, and it was not till many years afterwards that Dr. Fairchild, of New York, hit upon a simple, cheap, and effective process. In order to distinguish his preparation from the many worthless pancreatins and pancreatic emulsions then on the market, he gave it the distinctive name of "Zymine," and as such it has since been known, and was exhibited at this Museum by Fairchild Brothers and Foster. "Zymine" is a pancreatic extract, containing all the active principles of the organ from which it is prepared in a pure dry powder. It contains in an exceedingly active form the following ferments:—Trypsin, converting albumen into peptone; Diastase, converting starch into dextrine and sugar—the emulsive ferment essential to the assimilation of fats and oils and the milk-curdling ferment.

Pepsencia was another preparation in strong evidence at Fairchild Brothers and Foster's exhibit. This is obtained by direct maceration from the stomach of the pig and calf, and is either taken as a digestive aid diluted with water, or used for the preparation of digestive junkets.

THE
BIRMINGHAM MEDICAL REVIEW.
OCTOBER, 1895.

ORIGINAL COMMUNICATIONS.

SOME CONSIDERATIONS ON THE ETIOLOGY
OF TUMOURS.*

BY O. J. KAUFFMANN, M.D. LOND., M.R.C.P.

WITHIN the last five years much has been written which has appeared to throw light on the etiology of tumours, more especially the cancers. The question is not now uppermost in medical minds as it was two years ago; but that is because other and more exciting discoveries promising therapeutic success have recently been made, not because the question of the etiology of tumours is settled.

Of the theories regarding the causation of tumours the two most important, if not the only ones which still hold the ground, are the embryonic and the parasitic. All other causes of tumour-growths, with one exception, which have from time to time been alleged are merely subservient to one or the other of these two fundamental theories. The exception is the theory built on the assumption of altered innervation as the cause of tumours.

We owe the best exposition of the embryonic theory to Cohnheim. According to him, all tumours, whatever their structure, have sprung from embryonic cells or cell-groups, which have at one time or another in the development of the foetus been left unused by the growing organism and which have

* A Paper read at the meeting of the Midland Medical Society, March 6th, 1895.

thus remained in the body as inclusions which retain the embryonic characteristics of tissue change and of form amid the growing and developing cells which go to constitute the independent living being. For years, in many cases for the greater part of a lifetime, these embryonic elements may continue to lie dormant, and be called into active growth by some accidental local circumstance, or some progressive or egressive change in the nutrition of the body at large, and then develop into tumours.

At this point it may be advisable to define what, for the purposes of the present paper, is meant by the term tumour. I include in the term all new growths commonly connoted by that name, but exclude retention-cysts, inflammatory and hæmorrhagic exudites, and the granulomas.

The great majority of pathologists are probably agreed that the embryonic theory explains more satisfactorily than any other the occurrence of that large class of tumours which are commonly congenital, or which develop within so short a time from birth as to make it appear likely that they were really present in the fœtus, though too small to be noticed at the time of birth. As examples of this group I would instance many angiomas, myomas of the kidney, and the dermoid tumours. It seems, moreover, an unlikely thing to me—and to this point I shall have to return later—that a parasite should produce growths of the nature of the connective-tissue tumours, fully developed or embryonic, which form so large a proportion of the common new growths.

More is known about chondromas than about any other kind of tumours, and Cohnheim has chosen this form of growth to illustrate the applicability of the embryonic theory. I will here briefly refer to this illustration. Chondromas generally make their appearance about puberty, that is, when the bony skeleton, from which in the vast majority of instances they spring, undergoes great and rapid development. The embryonic theory applies in this way: The shafts of the long bones in the fœtus consist of cartilage, and it is a not unreasonable suggestion that

the chondromas are developed from portions of foetal cartilage which have remained unemployed in the subsequent formation of the bone. In support of this we have an observation by Virchow, who found an islet of cartilage lying within the cancellous structure of a perfectly formed femur. This islet did not interfere with the general outline of the bone. It was evidently a remainder of the foetal cartilages which preceded the bones. The reason why this particular portion of cartilage failed to undergo the usual development may be that its elements were numerically in excess of the requirements of the growing bone; or it may be that these particular groups of cartilage-cells were, from some chemical or vital imperfections, unfit to develop into bone. The fault cannot have lain with the quality of the nutriment supplied to the cells, for the rest of the bone had developed normally; it may however have lain in the faulty amount of blood supplied, through some vice of distribution of the blood-vessels, to this particular group of cartilage-cells. Whichever of these views we may take, it matters little, for each of them leaves us with this inference—that from some cause or causes, not at present accurately ascertainable, this cell-group retained the morphological and physiological characters of foetal life, and was incapable of participating in the changes which the rest of the cartilaginous shaft underwent after the establishment of independent life.

It is but natural to connect such an island of cartilage with the development of chondromas and to enquire what are the conditions under which a tumour can grow from such embryonic remains. According to Cohnheim the answer is that the generally increased blood-supply to the skeleton, which is the immediate precursor of the increased growth at puberty, acts upon these foetal remainders as a growth-stimulant just as it does upon the healthy bone. Certain it is that these tumours make their appearance at the period of existence of this stimulus. Why such embryonic remains should develop the characteristics of what we call tumours is at present quite unknown. The frequent multiplicity of chondromas and of certain other tumours

is a piece of evidence in favour of the embryonic theory, for errors of development are commonly multiple.

It would be easy to quote more examples of tumours which admit of an equally easy application of the embryonic theory. I need only instance fibromas (fibro-myomas) of the uterus, multiple fibromas of the nerves (false neuromas), true neuromas, and multiple angiomas.

But, as before said, few will question the probability of the embryonic origin of growths such as those instanced above. The greater or lesser resemblance of the histological elements composing these tumours to those of normal adult tissues depends, in all probability, upon the period of intra-uterine development at which the cells in question were, so to say, left behind. In further support of the foetal origin is the fact that in many tumours consisting of fully developed tissues the constituent elements nevertheless bear a stronger resemblance to these tissues as met with in late foetal life than to those occurring in the adult body. This applies specially to chondromas, myomas, and true neuromas. Again, the frequency with which the essentially foetal gelatinous connective tissue occurs in tumours is strikingly in contrast with its absence from the adult body.

It would be surprising if cells which retain foetal characteristics of structure and form did not possess foetal characteristics of function and metabolism and if they did not reproduce these peculiarities in their offspring. Now the chief characteristic of all embryonic structure is this power of growth and proliferation. All the energy of the cells of the foetus, from conception to birth, seems to be turned into the channel of proliferation. The reason why this can occur is that all the food received by the embryo is brought to it ready prepared directly to nourish the tissues without the intervention of exterior digestion, and that the embryo stands in no direct relationship with the outer world, and is therefore saved the necessity of adapting itself to circumstances. We notice in all tumours this same or similar tendency to proliferation, to the complete exclusion of all other

functions. In fact, the physiology of a tumour as regards its aim and end offers a striking resemblance to the physiology of the foetus. Even in the production of cells differing greatly in appearance from the parent cells, tumours—notably certain sarcomas—bear a strong likeness to foetal structures.

It is possible that in the future further light may be thrown upon this question by investigation of the chemistry of tumours. Little is known on this subject, but we know that one chemical feature of embryonal structures as distinguished from those of the adult is their wealth of glycogen. Certain tumours also present cells rich in this material.

It may with justice be urged against the embryonic theory of tumours that we know little of the existence of foetal remainders beyond perhaps the island of cartilage discovered by Virchow. Is there any further proof of the existence of such remainders? In the tongue and in the prepuce collections of epithelium have been found which have been interpreted as belonging to this group of remnants from embryonic life. Further proofs we have not. But it must be remembered that the difficulty of distinguishing such cell groups is great; firstly, on account of their small size; secondly, because they may, even when under investigation, show no morphological characters which we can identify as being peculiarly embryonic. Possibly some day the discovery of a new micro-chemical reaction will open a fresh line of sight in this direction. But as far as there is any anatomical evidence in favour of the embryonic remains, it goes distinctly in favour of the possibility of tumours developing from them. The scantiness of such anatomical evidence is, as just pointed out, no disproof. It is a stimulus to further search with a reasonable hope of success.

Moreover, it is far from unlikely that in a time of such luxuriant proliferation of cells as that of foetal life, over-production or faulty production should occur in some places, more especially perhaps at the seats of greatest formative activity. In conjunction with this we have the fact, well known and generally recognised though often differently interpreted, that many

tumours occur with predilection at the point of junction of the different embryonic layers and at places where physiology teaches us that cell-differentiation must have been particularly active—*e.g.*, the junction of the pylorus and duodenum; the junction of the œsophagus and stomach; the junction of the anal inversion of the epiblast and the hind-gut.

But if it is easy to see the application of the embryonic theory of the origin of tumours to those new growths at which we have glanced and to many others, there is a group to which the application of the theory is by no means so clear. Those tumours which develop "in later life—chiefly the cancers—are less easily explained on the supposition of embryonic remainders. Is it conceivable that such an islet of superfluous or insufficiently developed cells should retain its embryonic characters through the greater part of a man's life-time? We may readily conceive the preservation of embryonic vital characters for a short time after birth, but it is, at first sight, more difficult to imagine such characters lasting 50 or 60 years or more. What creates this apparent difficulty is the fact that the foetal remainders are fed by the same blood, qualitatively, as the whole body. But, it appears on further examination that the difficulty of admitting such a prolonged retention of embryonic characteristics in spite of a blood supply which is, so to say, "adult" in character, is more seeming than real. For, differentiation of structure in certain groups of cells belonging to the same embryonic layer certainly takes place in the foetus in preparation for the different functions which these cells have to assume when life independent of the placenta is established. This differentiation continues from its earliest appearance till the death of the individual, in spite of the cells being supplied with the same blood as others which, lying perhaps in their immediate vicinity, are engaged in quite different functions. There is not, therefore, any great difficulty in granting the retention of foetal characters both structural and functional, even for the greater part of a life-time, in cells which are not called upon to perform functions belonging to post-partum life.

If in early life, during the periods of puberty and sexual activity, we think with reason that the increased blood-supply to a system such as the long skeleton or the organs of generation, which invariably precedes the heightening of its functional activity and increased growth, is the immediate stimulating cause of the development into tumours of those cells which, by reason of their embryonic characters, are capable of a development of this kind, can we assume a similar exciting cause for the tumours which, as a rule, make their appearance during the decline of life? I think we can, and that without difficulty. Thiersch's well-known theory deserves the first mention in this connection. He attributes the growth of epithelial cancers to the wasting of the connective tissues in old age, and the consequent over-supply of blood to the epithelial structures. His theory appears to be open to criticism chiefly on the ground that it leaves out of account the blood-vascular changes and the generally enfeebled state of the circulation, which are at least as constant features of the senile change as are the wasting tissues. There is, I think, another and probably more important source of hyperæmias met with at all periods of life, equally in old age and in youth, viz., injury. In the young and those of active occupation injury is often sudden, and a number of tumours are commonly attributed to violence, and probably with good reason. Careful statistics have given a proportion of from 12 to 15 per cent. of all tumours as being due to this cause. But a more fruitful kind of injury than the sudden and violent is slow and persistent irritation, which will produce hyperæmia of the part to which it is applied just as surely as a blow or a fall will, with this difference—that the hyperæmia will be more lasting. Hyperæmia of this kind is produced by the persistent irritation of soot, causing chimney sweepers' and gardeners' cancer; of tar (tar-worker's cancer); by the irritation of the clay tobacco-pipe or the edge of a rough tooth; and of the slow ulcer which "takes on malignant action."

It will be justly asked whether such continuous irritation may not in itself be sufficient to produce a cancer independently of

any embryonic germs lying in the part. Such a result would however be opposed to everything we know positively of the effects of injury and irritation. Irritation may produce hyperæmia, and this, in normal tissues, is followed by hypertrophy and increase of function. Or irritation may cause inflammation followed by the well-known results which end in the formation of scar-tissue, or, in a few instances, in degeneration of the inflammatory products. No experimental hyperæmia or inflammation was ever known to end in the formation of a tumour. Moreover, we constantly see in daily life examples of continuous hyperæmia and irritation, and in how few such cases does a tumour develop. It appears clear that in persons who, under such conditions of persistent irritation, do develop a tumour, there must be an underlying element, and this to me is at present most readily explained by the embryonic remainder theory.

Experiments have proved that embryonic tissues implanted into the adult body have a remarkable power of proliferation as contrasted with adult tissues similarly implanted. The investigations of Zahn and of Leopold have shown that parts of an embryo implanted into an adult animal of the same species grow to a very large degree, often increasing their volume a hundred-fold before undergoing absorption. On the other hand, parts of an animal already born, no matter how old or young it be, when subjected to the same treatment, grow for a very short time only and to a much smaller degree, and are then quickly absorbed. Analogous experiments carried out to test the power of tissues of the living animal to live in parts of the body which are distant from their anatomical and physiological surrounding, confirm the conclusions drawn from the first group of experiments. Thus periosteum impacted in the branches of the pulmonary artery develops bone; but the bone is in a few weeks entirely absorbed, and either nothing, or a small amount of scar-tissue remains to indicate its former seat.

Clearly, therefore, embryonic tissues possess a kind of vitality and resistance to the absorbing powers of the normal tissues

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SHIPS.—To purify Cabins and Bunks on Board Ship.—Thoroughly sweep and wasp or scrub out with a solution of one part “EUCALTURP” to one hundred of water

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which ceases to be a property of the tissues when independent existence of the body is established. Upon what this vitality depends we do not know. But this much seems clear, as pointed out before, all embryonic cells have a fund of multiplying energy which far exceeds that of the cells of the body after birth. So, for example, the mammalian embryo grows far more in the time between conception and birth than does the body during the independent life.

If we now consider the parasitic theory of tumours, bearing in mind the definition of this latter term which I have given in conformity with modern pathology, it may at once be said that the statements hitherto made in favour of this theory apply exclusively to cancerous growths. In them alone have structures been discovered which have with some justification been regarded as parasitic. What are the grounds on which the parasitic theory of cancer has been built? As I conceive they are as follows:—Firstly, a certain resemblance in the metastatic process of cancerous growths with that observable in the granulomas, which we now know to be due to parasites. Secondly, a resemblance between the constitutional conditions met with in disseminated tuberculosis and in general carcinosis; this condition in the former we look upon as due to toxine-poisoning, and it has an apparent counterpart in the cachexia of cancer. Thirdly, certain investigations—in which a member of this Society, Mr. Law Webb, has taken a prominent part—which tend to show that cancer is endemic in certain houses, and, more lately, that it may possibly be conveyed by drinking-water. With this may be grouped those observations, old and new, which show that cancer flourishes more in districts lying on a clay soil than in those resting on chalk. Lastly, the discovery of the structures which have been interpreted as parasites.

Considering the last point, the presence of these structures has been amply demonstrated. Moreover, they occur in greatest profusion near the growing edge of a cancerous tumour. But, so far as I know, they have never been demonstrated, if

indeed they have been sought for, in the youngest examples of cancer accessible to the microscope—viz., the emboli in blood and lymph vessels which form the starting-points of metastatic tumours. Descriptions of the appearance of the structures in question — (?) parasites — moreover differ considerably with different observers. Lastly, these appearances were noticed and described by Virchow, and explained by him as being due to anomalies of cell-growth. The most powerful argument however against the parasitic nature of these structures is the failure of inoculation, accidental or experimental, to reproduce cancer in the inoculated person. Certainly Adamkiewicz's recent researches do tend to prove that cancer is inoculable from man to rabbit, but his results have been contradicted by later observers who repeated his experiments; and, without prejudging the matter, it must at present be held that Adamkiewicz's results are not satisfactorily proved.

It may be retorted that the failure to produce cancer by inoculation is parallel to the cases in which inoculation with a well-known pathogenic germ fails to produce its specific disease. Such failures are, no doubt, frequent enough in the case of tubercle-bacillus; more so still with the pyogenic micro-organisms and perhaps with syphilis. But it must be borne in mind that the number of accidental inoculations with cancer-material in surgeons must be considerable, yet we have not, I believe, even in these days of eager notice and writing, an authenticated case of a cancer occurring in a surgeon's hand as the result of inoculation.

But, it may be asked, how is it that in view of Leopold's experiments above referred to, and of the supposition that all cancers are of embryonic structure and functions, how is it that one fails to reproduce cancer by inoculation? Either Leopold's experiments, made entirely with cartilage, will not apply to cancer, or the theory of the embryonic nature of the cancer-cells must be unfounded.

That most persons suffering from cancer are inoculable with the disease in parts of the body distant from the original tumour

is a truism. The experiment is performed for us every day by the impaction of portions of the original growth in the blood-vessels of remote parts and the development from these emboli of metastatic tumours.

Now Leopold's experiments on the implantation of embryonic particles resulted in the growth of tumours only in a certain proportion of the animals inoculated. In the majority of his subjects of experiment the proliferation of the implanted embryonic part underwent a check before it could be said to have acquired the dignity of a tumour; and after remaining stationary for some time it was slowly absorbed. This difference of behaviour can lie only in the several animals which were employed; in other words, the tissues into which the embryonic particle was introduced had an effect upon the behaviour of the latter.

No doubt before a tumour can develop in a man there is required, besides the embryonic element from which it is to spring, a condition of the body which may be called one of lowered physiological resistance, perhaps of a peculiar—*i.e.*, specific—character; perhaps only of such a nature as is met with commonly as a condition predisposing to any disease. Probably even the local provoking causes, which are, as we have seen, to be grouped in common as hyperæmia-producing, are quite ineffectual without the generally predisposing functional condition or disturbance of the balance of power between the embryonic remainder and the tissues of the body. What may be the nature of the normal balance of power we cannot say; but we must recognise its existence. Without it tumours of all kinds would probably be much more common than they are. For if we consider the great liability which there must be in each embryo to produce excessive or faulty cells, we must confess that the probability of most of us having such embryonic elements about our bodies is considerable.

Recent pathological research has moreover made us familiar with the resisting power of the body to morbid influences, and the idea is not far-fetched.

It is accordingly my belief that we may some day hear of the case of a person who does not possess this proper balance of power, and who, when inoculated with cancer-cells, will, under favouring conditions of the local circumstances of implantation, suffer from cancer. Possibly the discrepancies between Adamkiewicz's inoculation experiments and those of his cross-examiners may have depended upon the different conditions of the animals of experiment in each case.

With regard to the observations on the topographical distribution of cancer, it cannot be said that they amount to proof of its parasitic nature. Mr. Law Webb himself points out that the cases completely observed from this point of view are not yet sufficiently numerous to allow us to induce a general principle. But though many of the instances thus recorded do not carry conviction as to their mode of origin, they are nevertheless, from the point of view of hygiene, of the greatest importance.

Considering now the "cancerous cachexia" as an evidence of blood-poisoning analogous in production to that observed in glanders or tubercle, the question arises: Is this cachexia really a regular concomitant of cancer? As a physician, one's clinical experience of cancer is practically limited to certain situations of the disease. But placing side by side my own impressions and those of surgeons, it appears to me that the cachexia of cancer is by far most strongly developed when the disease attacks the alimentary canal; and here, again, cachexia follows more quickly on carcinoma of the gullet or stomach than on that of the tongue or rectum. When the breast, testis, or lip is the seat of the tumour, cachexia supervenes very slowly, and is hardly ever so profound as in cancer of the alimentary canal. I used to be under the impression that in carcinoma of the uterus, cachexia formed an early and marked symptom; but now know, by more extensive recent experience and by what I have gathered from others, that when cachexia does occur, it develops later than in cancer of the digestive tract. It appears therefore that the situation of the growth is largely responsible

for the cachexia; and, leaving out of consideration those instances in which the cachexia is produced by obstruction to the entrance of food, as in stenosis of the gullet or gastric orifices, I suggest that the cachexia is largely due to the ulceration of the tumour and the absorption of the proceeds of cell-degeneration, rather than to any specific toxin or poison elaborated in the actively growing cancer; in other words, that the cachexia is due to necrosis of the tumour, not to its growth. It may be, and very probably is the case, that in cancerous obstruction of the pylorus the cachexia is materially helped by the retained and decomposing food-masses in the stomach. There is no proof however that the cachexia which occurs in cancer is peculiar to that disease, but, rather, there is evidence to show that it is due entirely to extensive destruction of tissue, particularly when the products of destruction are near the absorbent apparatus. Recent researches by Adamkiewicz have shown that the symptoms of cancerous cachexia are indistinguishable from those produced by one of the cadaveric poisons; and, so far as it goes, this result substantiates the belief which I have formulated above.

Lastly, among the points of evidence brought forward in favour of the parasitism of cancer we have briefly to consider the distribution and mode of growth of the metastatic tumours. We know for certain that they are disseminated partly by the lymph-stream and then by the blood-stream, and in part directly by means of the blood-stream. The secondary tumours begin by the impaction of one or more tumour-cells in a lymph- or blood-vessel. Now tubercle, and no doubt the other granulomas are likewise spread throughout the body from their original seat or seats by means of the blood- or lymph-channels. and this similarity between tumours and granulomas leads to no further conclusion than that both kinds of neoplasm are generalised by the same channels.

We see therefore that the main points which appear to bear out the parasitic nature of cancer are by no means strong supports when individually considered, and must at present be held to fall far short of proof even when taken collectively.

If a further argument against the parasitism of cancer be sought, it is to be found, I think, in the clinical resemblance between cancer and malignant sarcoma. It is very difficult to conceive how a parasite should produce growths so complex as, for instance, a fibro-myoma, which may nevertheless be perfectly malignant according to the definition which I will presently give. What we know positively of the effects of parasites in producing neoplasms is directly opposed to the probability of such a growth as spindle- or mixed-cell-sarcoma being produced by such a cause. All new-growth-forming parasites with which we are acquainted form their neoplasms out of the cellular inflammatory effusions which their presence provokes. In the more highly developed sarcomas, notably represented by melanotic sarcoma, with its large cells, there is no evidence whatever to show that these constituent elements have grown from ordinary leucocytes.

There is a marked difference in the behaviour of a malignant tumour and that of an innocent tumour, and it is worth while to enquire whether this difference justifies us in judging malignant tumours as being essentially different from benign tumours, that is, as things totally distinct from them genetically and clinically, which only through accident resemble them in certain points? The complete answer to this question can only be found by a future study of the behaviour of all kinds of tumours; but I think it can be shown that this difference between malignant and non-malignant tumours is not so profound as it may at first sight appear to be.

As a definition of "malignant," with which few will disagree, I will accept the following by Cohnheim:—Malignancy is the quality of a tumour in virtue of which it attacks neighbouring tissues and forms metastatic growths.

One point which strongly favours the embryonic origin of malignant tumours—*i. e.*, an origin which we have seen to be probable in the case of many simple or non-malignant growths, is the simultaneous occurrence of several malignant tumours in the same person, the tumours not being structurally identical, but varying according to their seats. These cases are rare, but

possibly not so rare as one is apt to think, for the opportunities of making autopsies in cases of cancer are after all not very frequent considering the prevalence of the disease. A case of this sort, viz., of simultaneous squamous epithelioma of the tongue and columnar epithelioma of adenoid structure in the sigmoid occurred a little while ago at the Queen's Hospital.

Further, we have well-authenticated cases of growths possessing a structure which is usually identified with non-malignant properties assuming the characteristics of malignancy. Such instances are recorded of myxoma, lipo-myxoma, lipoma, and chondroma. A practical difficulty moreover occurs not infrequently in attempting to determine by mere microscopical examination whether a tumour be malignant or non-malignant.

In many cases we observe the metastases following and probably depending upon the fact that the primary growth invades the neighbouring healthy tissues. This is the usual course, and is seen in the majority of carcinomas. In other instances the metastases are probably effected by means of the blood and lymph-vessels present in the original tumour—a mode of metastasis which would appear to be the rule in melano-sarcomas. That the features of further development of malignant tumours are not confined for explanation to the parasitic theory, we have seen. The only question therefore is whether the occurrence of malignancy may not depend, in certain conditions, upon the state of the tissues surrounding the primary tumour, and, in other conditions, upon the peculiarities and structure of the cells constituting the tumour. That the latter point, at all events, has a powerful influence in determining malignancy is shown by the preponderatingly embryonic character of structure of the greater number of malignant tumours. That the former condition is also at work is indicated by the occasional instances of malignancy of tumours having more fully developed histological characters.

I cannot therefore see any urgent reason for attributing to malignant growths causes different from that which we assign to benign tumours. On the contrary, the facts summarised

appear to me to point to a unity in the etiology of tumours—viz., the embryonic element. This cannot be called parasitic in any other sense than that it differs structurally and functionally from the rest of the body-tissues, and at the same time receives its nourishment from the body which it is liable to destroy. But that is not what is meant by attributing malignant growths to the action of “parasites” which, it is implied, are introduced into the body from without.

ARE COLLIERS EXEMPT FROM CANCER ?

BY T. LAW WEBB, M.R.C.S. ENG., L.R.C.P. LOND.

ACCORDING to Paget, Buck, and other authorities, as quoted by Butlin in his careful work on “Cancer of the Scrotum in Chimney-sweeps and Others,” colliers are entirely exempt from cancer of the scrotum. More than this, Ballance has mentioned statistics intended to show that coal-miners are not only free from cancer of the scrotum, but that they suffer less frequently from cancer generally than do other men. This is a very remarkable fact, if indeed it turns out to be one. The statement does not seem to have attracted the attention it deserves, and I am not aware of any serious attempt having been made either to prove or disprove it. This is somewhat surprising when we consider how many able surgeons are practising in colliery districts (such as the Staffordshire “Black Country” and other places) who must have had ample opportunity for noting this apparent immunity of the coal-miners. These gentlemen, and probably they only, can give us an authoritative opinion as to whether we have really sufficient grounds for believing that colliers do not suffer from cancer.

At the outset it is well to premise that those writers who have thought it worth while to notice this exceptional privilege of colliers have been careful to state that by colliers they mean only the pitmen who actually work underground, and not the

banksmen and others who work on the top. And I think it well to be definite in this, because the clothing, food, drink, and habits generally of the two classes are very different.

I have practised for twenty-five years in a district overlying the Shropshire coalfield, and during that time have been surgeon to two collieries, so that I may claim to know something of the miners and their ailments; but, after careful consideration, I cannot remember having seen a single case of cancerous disease in a collier. Moreover, an examination of the books of the District Registrar shows that of all the persons whose deaths are registered as due to malignant disease during the past thirty years, *only two are described as "coal-miners."* Of these, one, I know positively, had long retired from the arduous occupation of coal-getting, and had, for many years before his decease, followed the more gentlemanly pursuit of rat-catching. The other died in the workhouse, and had not worked in the pits for some time. It should be borne in mind that I am speaking of the inhabitants of a locality where cancer is very common, and where I have attended many cases of cancer occurring amongst the furnace-men, moulders, iron-workers, general labourers, and others.

Another practitioner, who lives in the centre of the same mining district, tells me that he does not recollect ever having attended a collier suffering from carcinomatous disease. He says, however, that he has had under his care several cases of sarcoma in *bonâ fide* colliers; and in this his experience agrees with mine. I have notes of four cases of sarcoma in colliers. Two of these were myxo-sarcomata of the adductor muscles of the thigh in elderly men. Another was a spindle-cell growth of the inner border of the triceps near the elbow; and a fourth was a round-celled growth in the testicle, which was fatal by invasion of the lumbar glands. It would seem, therefore, that colliers as a class are not exempt from all malignant disease, but only from new growths of the carcinomatous type. But if we admit that they are exempt from these, we are brought face to face with a most difficult problem; for how shall we account for this wonderful immunity?

It is perhaps transcending the limits of this paper, as defined by its title, to enter upon a consideration of this question, yet I am tempted to record some facts noted by myself, with interpretations of the same for which I am entirely responsible. Now I take it that colliers, as a class, are very clean men. When a pitman returns from his work he is covered with coal dust, and usually retires to the "wash'us" at the back of his cottage, where he locks himself in and takes his tub, washing himself in a very thorough manner all over. He is therefore less liable than are other men to warts, etc., and skin diseases of all kinds caused by the irritation of dirt and retained secretions. Mr. Butlin, very properly, as I think, has laid great stress upon frequent baths and free cleansing of the skin as a preventive of chimney-sweep's cancer—or at any rate as preventing those warts and inflammatory conditions of the skin which are the precursors of epithelioma of the scrotum. The collier may therefore escape some forms of cancer by his habit of frequent baths and ablutions.

But how does he escape cancer of tongue, stomach, gullet, liver, and bowel? The "parasitic theory" of the causation of cancer, in spite of its many difficulties, has much to be said in its favour. According to it, cancer is an enormous proliferation of the epithelium of glandular structures, caused by the irritation of an intra-cellular parasite. How the parasite gains admission to the body is as yet unknown, but I have suggested that cancer may be one of the "water-borne" diseases, and, in that case, that certain wells and sources of water supply are dangerous to drink from. It would be saying too much to aver that *colliers never drink water from well, tap, pump, or roadside spring*, but I believe that it is exceedingly rare for them to do so, and the men's habits explain this. The average collier begins work at the pit at 6 a.m. If he lives near his pit he takes his breakfast with him, to be consumed about 9 or 10 o'clock. This meal will consist of bread and bacon, or bread and butter, or even bread and cheese, which he will wash down with a can of cold tea or coffee. If he lives some mile or more from his work, he

will have a cup of tea or coffee and some bread and bacon before starting. But whatever he eats, he always takes with him to work the invariable quart can of cold tea or coffee without milk. When thirsty, he takes a sup from this can, and so does not require to drink from any casual supply of water. He has probably finished his day's work early in the afternoon. He then comes home to dinner, which is usually meat and potatoes or bacon and potatoes. With this meal also he frequently drinks tea; but many of the men vastly prefer small beer, if the state of the family funds permit this luxury. After this "dinner-tea" comes "supper" about 7 or 8 p.m. Commonly this will be bread and cheese, with sometimes an onion and a pint of beer.

On the whole, the colliers of this district are a temperate, peaceable, law-abiding class, not given to excesses of any kind. Though often seriously injured in their dangerous occupation, they survive the most extensive wounds and fractures, and if often pale and anæmic in look, are really a healthy set of men. I could wish that it lay in my power to compare notes on the subject of colliers' diseases with those surgeons who practise in the South Wales colliery district, or in the great collieries of the North. I can only hope that this imperfect essay on an important subject may meet the eye of some able investigator residing in one of these great centres of industry, and incite him to record for our benefit the results of his wider experience with regard to the alleged unequal distribution of cancer mortality in the population of coal-mining districts.

SOME REMARKS UPON ENTERIC FEVER AND ITS TREATMENT.*

BY J. HEADLEY NEALE, M.B., C.M. EDIN., M.R.C.P. LOND.
PHYSICIAN TO THE LEICESTER INFIRMARY AND FEVER HOUSE.

Mr. President and Gentlemen;

I cannot claim to have anything startling, new, or original to lay before you to-day, but as my hospital record, to the end of 1894, stands at 124 cases, with 7 deaths, or a mortality of 5·64 per cent., I feel I may with confidence ask you to listen to a few general remarks upon this insidious and omnipresent disease.

While with feelings of satisfaction I quote a somewhat low mortality, you must not think that I wish to take to myself all, or even the larger share of credit, for this gratifying result. First and foremost stands pre-eminent the excellence of the Nursing staff in the Fever House of the Leicester Infirmary, with, for a long time past, Nurse Braye at its head. Again, in the medicinal part of the treatment I have, at all events, latterly, been merely treading in the footsteps of another; but to this I will refer later on.

Few other classes of cases place the hospital physician at a greater disadvantage than when confronted for the first time with a patient suffering, or supposed to be suffering, from enteric fever; still fewer so persist upon departing from the descriptions given in our classical text-books and College notes.

Previous history, diathetic tendencies, habits, mode and conditions of life, of which we are able to learn little or nothing; all have a greater or less important bearing upon the case, both as regards the incidence of the poison (a thing of the past when we see it) and the amount of resistance to its aggression available

* Read before the Annual Meeting of the Midland Branch of the British Medical Association at Derby, June 13th, 1895.

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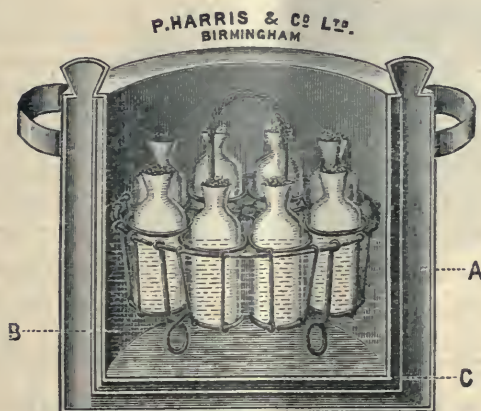
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in the future. Who, recalling his student days, cannot remember the importance attached to the gurgling in the right iliac fossa? You may meet with it in a score of other illnesses. Take the charts of my 124 cases, and in how many will you find the typical "staircase" of the evening rise and morning remission? Not in five per cent. In few diseases, at least so far as my experience goes, do the thermotaxic centres indulge in greater vagaries than in typhoid. I do get some typical "staircases" certainly, but it is usually at the decline of the disease, ushering in a speedy and uninterrupted return to convalescence.

Diagnosis.—The diagnosis of typhoid, then, like pregnancy, must not be based upon one or even more signs, however positive they may appear, but on a judicial summary of, and decision upon, all we can gather by sight, touch, and hearing. How fallacies *may* arise I can best illustrate by recording two errors of my own. In the first, the patient (a woman) was sent up and accepted by me as a case of typhoid acquired during the puerperium. There were no spots, but the frequent stools were, to all intents and purposes, typically "pea-soupy." She was evidently past all hope when admitted, and died in a day or two.

Post mortem there was absolutely no sign of ulceration, past or recent, in the intestinal tract, but the uterus and broad ligaments were gangrenous!

The second patient (also a woman) was carried in for admission with a history of three weeks' persistent diarrhoea, and evidently moribund. So much was her appearance suggestive of typhoid, that I ordered her straight to the Fever House. As in the first case, there were no spots, but the pea-soupy stools she passed seemed to confirm what was after all but a visual diagnosis. She soon died, and, *post mortem*, again was no ulceration present in the intestines; but what was originally the left kidney was found to be a mere sac filled with pus, with multiple abscesses in other organs. I was not present at the *post mortem*, or should have suggested a search of the left ureter for a blockage. There had been copious albumen but not a trace of pus in the urine.

These two cases sufficiently demonstrate the fact that "pea-soupy" stools alone must not be looked upon as pathognomonic of typhoid.

Take, again, the prominence given by both authors and teachers to the diarrhœa of typhoid. Unfortunately I have not been able to present accurate statistics of my 124 cases on this particular point; but I can with safety affirm that the majority have been the subjects of obstinate constipation; and I shall be able to quote some interesting specimens when I arrive later on at the subject of treatment. The persistent high temperature, spots, state of the tongue, splenic enlargement, hebetude, general prostration and *smell* of the patient are, to my mind, the most reliable signs upon which to base a diagnosis.

Treatment.—Turning to the subject of treatment, I hold that if you can secure your patient sufficiently early, and treat him antiseptically, you will have, in spite of diathetic tendencies and other disadvantages, every reason to be satisfied with the result. I have consistently practised on this theory, and have tried, in turn, the salicylates, sulphite of sodium, perchloride of mercury, and Robert Grösser's absolute phenol clothed in keratin, so strongly championed by Professor Charteris, of Glasgow (which I continued using until some of the pills were found intact in the patient's stools); but I have long since pinned my faith to the biniodide of mercury solution, prepared according to Dr. C. R. Illingworth's formula; and I think that a mortality of 5·64 per cent. cannot be put down solely to accident of circumstance, but must speak in its favour. It is a most powerful germicide, absolutely non-irritant, and in this respect completely puts in the shade its sister drug the perchloride. On more than one occasion has the cautious and vigilant house physician "crossed off" the biniodide mixture on account of diarrhœa, but the diarrhœa has gone on all the same. With gentle suasion I have induced him to take the risk of its resumption; the diarrhœa has diminished and the patient recovered.

But first and foremost in the treatment of typhoid, stands of course, diet. The old formula of three pints of milk, or where

there is no diarrhoea, two of milk and one of beef-tea, in the twenty-four hours, I have had occasion to modify. Obviously in an illness where the digestive functions are so interfered with, as in typhoid, the indication is for pre-digested food ; and I have depended largely upon "Benger," with Denayer's peptones in bad cases, for aliment. I have also for a long time past given lemon and lime juices to allay the distressing thirst so frequently present in this disease ; so that my dietary is very much in accord with that of Dr. L. Henry, of Melbourne (reported in the *Journal* of April 16th), who condemns the use of milk, and advocates infusions of the cereals, and fruit pulps. One rule I have laid down, and it is absolutely adhered to in all my cases ; that is, that in spite of the distressing appeals for "some'ut to eat," that so often issues from the patient's lips, I never allow a particle of solid food, not even bread and milk, to pass them till the temperature has been normal or sub-normal for *nine* consecutive days. I had an important object lesson on this particular point in the case of a young man aged 18, a butcher's assistant, who came under my care a few years ago. The disease was of so mild a type that beyond dieting there was absolutely no treatment. The temperature came down and everything pointed to a speedy recovery, when all of a sudden disaster supervened ; hyper-pyrexia, hæmorrhage followed hæmorrhage, and for a long time the patient hovered at the point of death, and he remained more than six months in the hospital under treatment. I made most searching enquiries, and Nurse Braye informed me that a few bread crumbs had been found in the patient's bed ; but he stoutly denied having eaten anything. It was not until long afterwards that, meeting his own doctor over another case, I learned from him that the lad had confessed to his mother, after he got home, that he had begged a bit of bread and butter from the man in the next bed. That simple bit of bread and butter nearly cost the patient his life, and certainly, the Infirmary his four months' additional keep.

Next in importance to diet I place attention to the condition of the patient's bowels. I am disposed to think that too much

anxiety is usually felt over the frequent stools in typhoid; and providing of course that there is no hæmorrhage, no pain indicating excessive peristalsis, and an absence of exhaustion or signs of cardiac failure, I am not alarmed at five, six, or even seven evacuations in the twenty-four hours, regarding them rather as nature's attempt to eliminate the disease. (Chart shown of case with 406 stools in 74 days, ending in recovery)

I see a greater danger in allowing constipation to persist, for I feel certain that so-called relapses and many secondary complications, in typhoid as in other "fever cases," are traceable to re-absorption from the alimentary tract; and it appears to me that the old idea of not disturbing that tract in typhoid is based upon an erroneous conception of the pathology of the disease. It is of course a *sine quâ non* that the upper bowel, wherein the inflamed patches exist, must be kept quiet; but it is very rarely that ulceration extends or need extend beyond the ileo-cæcal valve, and experience has long since shown me that warm water enemata can be safely given without exciting peristalsis in the region beyond which the warm water reaches; consequently, my patients are never allowed to go more than thirty-six hours without this sanitary measure being resorted to. I quote five examples.

Name.	Sex.	Age.	Duration of illness.	Enemata.
A. S.	F.	16	57 days	20
M. O.	F.	4	60 „	32
H. C.	M.	17	70 „	25
E. C.	F.	27	41 „	24
F. C.	M.	12	80 „	37

I have never had recourse to the bath treatment in the pyrexia of typhoid, but whenever the temperature reaches 103° or over, the patient is sponged for twenty minutes with tepid water gradually cooled down till ice is added. In the early stages, I have found an ice-bag fixed over the colon of use in keeping down the temperature; but I consider that the employment of such pronounced antipyretic drugs as antipyrin and

phenacetin cannot be too strongly condemned. Two other drugs, each invaluable in its time and place, to my mind require the utmost discretion in their use—namely, alcohol and opium. Very few of my patients get any of the latter, and many of my cases have gone on to recovery without the assistance of the former, while in others it has only been commenced in the convalescent stage; in fact, I deprecate the plan of its adoption empirically as a standard article of dietary in typhoid, and am disposed to think that its importance as a sheet-anchor in this disease has been somewhat over-rated. Opium and its preparations require still greater caution. It stands to reason that in a disease where the blood is so overcharged with impurities as in this, any drug which markedly increases its venosity is contra-indicated, except where we are left absolutely without any other alternative. That disaster can follow its use the following case testifies:—

Mary S., aged 14, and her sister Fanny, aged 16, were both admitted on the same day, and lay in adjoining beds. Mary was a bright intelligent child, while Fanny was a microcephalic imbecile. She recovered, but Mary died; and this is how it came about. The child was apparently doing well, excepting that the temperature ruied high, when “diarrhœa” supervened, and I found that the resident physician had ordered the usual starch and opium enema, and this was repeated more than once for three nights. I remonstrated with him, but (perhaps wrongly) gave him no positive orders to desist, as I was afraid of placing him at a disadvantage. He was on the spot, I was not; it was he who was liable to be called up in the middle of the night, not I: and indeed there seemed to be no small justification for his thus pressing the drug, as in three days the number of stools passed was as follows—4, 5, and 13. The stools, though frequent, were but slight and very watery, and there was a good deal of abdominal pain and tenesmus. So matters went on; the child grew rapidly worse, became comatose, and died. *Post mortem*, the large intestine was found to be absolutely full of hard scybalous masses, while there was a

large sub-peritoneal hæmorrhage at the hepatic flexure. The frequent stools were no doubt due to hypersecretion of the intestinal glands, the result of irritation from the scybala; and the tenesmus indicated Nature's effort to overcome the obstruction, the fluid result passing out, while the solid cause remained behind.

I was taught that digitalis was harmful in cases where prolonged pyrexia must of necessity have produced some fatty degeneration of the fibres of the cardiac muscles; yet I have had excellent results from its employment, combined with the ammonium carbonate, in quieting and strengthening an almost uncountable, weak, and thready pulse. For hæmorrhage I use hazeline in dram doses, and am satisfied with the result.

Complications.—A few of these I have already touched upon, and the others are too well known to need but a passing reference. In my 124 cases I have only had one bubo, but in several convalescence has been retarded by troublesome abscesses.

A child now under my care, and desperately ill, developed in a single night a swelling the size of a Tangerine orange over the ramus of the right lower jaw, the left following suit in the next twenty-four hours. These I traced to septic absorption from a large deeply-sloughing sore on the lower lip. An abscess resulted on the right side which has been opened, and the child is still alive and perhaps a trifle better. In another case, that of an adult male still under treatment, an apparently even course was rudely interrupted by sudden pyrexia, accompanied by intense aching of the limbs and joints. Learning that the patient had once had a mild attack of rheumatic fever, I discarded the idea of a relapse, and treated him with the salicylates. They took effect, and he is now enjoying solid food and getting up.

The "insanity" of typhoid has its comical side, but must nevertheless not be overlooked. I have had patients, now creditable members of society, who have (though adults) affectionately nursed dolls; others who have in turn emulated our Saurian ancestry in their antics; others who have spat at and struck their nurses, and one, obviously more insane than the

rest, who, in a moment of irritation, dubbed me "a great big fat-head." The insanity, unless complicated with heredity, is never lasting.

Prognosis.—The prognosis of Typhoid should be guarded, and indeed can only be given from day to day. One great indication to me of the patient's condition is the inflection of the voice, and I can tell with my eyes shut, on hearing him speak, if he is better or worse than on the preceding day; but no disease is more pregnant with surprises, sometimes unpleasant, but often the very opposite, than typhoid. I always feel more anxiety over patients of the true Saxon type, delicate freckled skin and ruddy hair; they invariably have the disease in its worst form. It is, I believe, the general impression that one attack of typhoid renders the subject immune from further attacks. By the courtesy of my colleague, Dr. Cooper, I show you the chart of one of his cases, which I think gives direct proof of re-infection. The patient was up and about and had been taking solid food for twenty days, when she again fell ill; there being no doubt from the stools and spots that it was a second attack of typhoid.

Concluding remarks.—In conclusion I may claim that in giving my mortality as 7 in 124 cases, I have begged nothing, since four of these came under my care with perforation already established, and practically did not receive treatment; but as I do not believe in dealing with half-truths, I have included them in my total. The points which I have wished to emphasise in the foregoing remarks are :—

1. The antiseptic treatment of the disease (preferably with the biniodide of mercury solution).
2. Pre-digested foods.
3. Never to allow a particle of solid food to be taken until the temperature has been normal for nine consecutive days.
4. The avoidance of too much haste in checking diarrhœa.
5. Never to allow the bowels to remain unrelieved for a longer period than thirty-six hours.
6. The avoidance of opium preparations, and great discretion in the use of alcohol.

THE MISUSE OF EMOLLIENTS IN SOME CHRONIC
SUPERFICIAL INFLAMMATIONS.

BY PAUL M CHAPMAN, M.D. LOND., F.R.C.P.

"EMOLLIENTS," says Dr. Lauder Brunton, "are substances which soften and relax, while demulcents are substances which protect and soothe the parts to which they are applied. . . . Emollients are more generally spoken of in relation to their application to the skin, and demulcents to the mucous membrane." "The action of these remedies," according to Wood's *Therapeutics*, "is largely mechanical, and they probably soften the derm in precisely the same way as they affect a raw hide or a piece of leather." They also protect the surface from the air. In freshly inflamed parts, the action of emollients is to relieve tension and pain. The mechanical effect is to relieve pressure and irritation of the superficial nerve-endings. Pain, which is eminently salutary in directing attention to the source of irritation, is itself a depressant of vitality, and its relief is one of the first conditions of cure.

So frequently is this the case that the application of medicaments through the medium of ointments in inflamed conditions of the skin has become a habit. When some obstinate dermatitis occurs, the medicament is varied while the medium remains the same. Too frequently the practitioner overlooks this error of treatment. The analogy might be pursued in the case of lotions, but for the present purpose these may be left out of view.

An obstinate case of general psoriasis which had been treated both by myself and by others without success, by means of ointments containing infinitely varied medicaments, including tar, rapidly got well when sent to Mr. Jonathan Hutchinson, who prescribed a spirit lotion containing tar. Such cases, when reviewed with others of a different nature occurring in my own practice, are strongly suggestive; and I think, as the treatment

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This is an important point to remember, because there are many emulsions thrust on the market which are merely gummy messes or alkaline soaps. In either case, the acid juices of the stomach reduce the oil to its original form. Derangement of the digestive tract invariably follows, causing so great a revulsion of feeling that the patient refuses to go on with the oil



under any circumstances. So unfortunate a result never follows the administration of the Kepler Solution. Patients positively relish it, the very slight flavour of the oil giving a peculiar piquancy to the taste.

The *British Medical Journal* thus comments upon this pharmaceutical triumph:—

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The *Lancet* adds its tribute of praise:—“Many can take it easily who cannot take the oil.”

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adopted is founded on an intelligent principle, this short paper may convey something more than one or two useful "tips" in practice.

It has of course long been known that the strong solution of perchloride of iron, when painted on a surface affected with erysipelas, has the property of limiting the superficial inflammation in a most remarkable manner. I had often been struck with this, and had extended its use to cases of deep-seated cellulitis with excellent results. That the astringent action on the superficial vessels is the main contributor to the obvious benefit is doubtful. My own feeling is that in some way the application helps the organic cells to fight their battle at an advantage; while by acting as a germicide at the surface, or by limiting the resources of the invading microbes, it may be a direct hindrance to their invasion.

In these cases the surface of the skin is unbroken, and the same excellent effect may be gained by employing the same local remedy in cases of "poisoned" fingers, oncoming whitlow, and in numerous infective and suppurative dermatites on the hands and elsewhere. Constantly in "poisoned" fingers where poultices may at first relieve the pain but cellulitis sets in and a blush is extending to the roots of the fingers, the wrist, and up the arm, I have entirely cut short the inflammation by painting the parts well and widely with strong solution of perchloride of iron twice or three times a week, and no suppuration has followed. The cure is remarkably rapid in some cases, one or two applications alone being necessary. Occasionally a relapse occurs, and it must always be looked for, but the same treatment readopted will again, and finally, prevail. I should recommend a trial of it in *all* cases of obstinate localised skin eruption, where medicamented or non-medicamented emollients fail.

Perhaps still more striking are the benefits derived in varicose ulcerations on the legs, even when these are extremely severe, with a large denuded surface surrounded by a deep overhanging edge, the parts red-purple, acutely painful, and the surface extremely offensive. Opium in these cases is given with benefit,

partly owing to the relief from pain alluded to above. But the wraps and folds should be taken off, together with the white crusts of oxide of zinc or other ointments which have perhaps been employed for months, and even years, and the whole of the raw and discoloured portion of the leg should be thickly painted with the strong solution which is allowed to dry. Pain follows, lasting from 15 to 20 minutes, rarely longer; yet I have never known a patient refuse to have the operation repeated, the benefit is so directly obvious. Happily the pain is less on every subsequent occasion. The surface is glazed with albuminate, all offensive discharge disappears, and if the patient is not too old and the general nutrition too impaired, the ulcer will at once take on a tendency to heal. Rest, with elevation of the part, and perhaps opium, will of course hasten the result, but are not absolutely necessary except in the worst cases. Bandages should of course be used as a support.

Lastly, but not the least important kind of cases in which emollients should be abandoned, are those of obstinate chronic inflammation of the eyelids, including tinea tarsi. I have known cases which have been under excellent oculists for many years, and for which perhaps every known ointment has been prescribed; while the patient has been treated in turn for rheumatism, syphilis, and gout, with a want of success which has led him to resignedly bear his cross as an inevitable burden. I would ask those who have to do with such cases to abandon for once the emollient vehicle, and, while continuing cocain and boric acid drops within the conjunctival sac, to endeavour to obtain a local astringent action by means of cold bathing followed by the local application of Eau-de-Cologne (as suggested to me by Dr. Fitzsimons, of Hereford), or, still better, of absolute alcohol to the external eyelids, or, when at a loss, even of "A. C. E." mixture. The result will often be extremely gratifying both to doctor and patient.

That the local application of alcohol has been practically limited to the prevention of bed-sores is indeed remarkable.

The local action of absolute alcohol is to permanently harden

the tissues, and it is an excellent germicide. It has a great affinity for watery fluids, and completely evaporates in a few moments. Its action is therefore strictly limited both in time and in extent. In combination with perchloride of iron, even as the strong tincture of the perchloride, it has not been used by me as a local application; yet the tincture may have its own special uses. The more general use of the liquor ferri perchlor. fort., as also of alcohol, in those cases where emollients are contra-indicated should, I think, be strongly recommended, and it is for the purpose of giving a useful suggestion to others that I have taken this opportunity of asking them whether an emollient, *i. e.*, "a substance which softens and relaxes the tissues," should be so indiscriminately and thoughtlessly used as a vehicle.

REPORTS OF CASES.

CASE OF CARCINOMA OF THE PYLORUS, WITH MULTIPLE THROMBOSIS OF THE SUPERFICIAL VEINS.

BY R. M. SIMON, M.D., F.R.C.P.
PHYSICIAN TO THE BIRMINGHAM GENERAL HOSPITAL.

The following case is of interest mainly on account of its clinical resemblance to one of pernicious anæmia.

The patient, who was a well-developed man 37 years of age, was admitted to the Birmingham General Hospital on Jan. 1st, 1894, with the following history:—Eighteen months before, he began to suffer from intense indigestion and was unable to retain any food. For some time, however, he did not suffer much inconvenience from his complaint, the nausea and indigestion being always relieved by vomiting, which occurred about an hour after taking food, and did not return until after

the next meal. About four months before admission he rapidly became worse, all the symptoms being increased, and, although before a well-nourished ruddy-faced man, he rapidly lost flesh and became thin and pale. During the last four months he had lost four and a half stone in weight.

No information was gained from the family history, nor had the patient suffered from previous illness. He was a baker by trade, and was in a prosperous condition. He had not taken alcohol in any form for many years, but had been in the habit of drinking large quantities of cold tea with his meals.

The physical examination gave the following facts:—The upper teeth were all gone with the exception of the left canine, leaving a row of rough and jagged stumps; the lower teeth were sound. The tongue was small, white, and furred, and somewhat tooth-indented. The appetite was good; but patient complained of continual thirst and a foul acid taste in the mouth after fasting. Vomiting usually occurred about an hour after food. The vomit gave an intensely acid reaction and was excessively foul. There was free HCl in small quantity, and abundant lactic and butyric acids; microscopically the sediment was found to consist of globules of fat, particles of undigested food, granular *débris*, and epithelial cells. Large quantities of yeast cells were present, but there were no signs of *sarcinæ*. The bowels were formerly in regular action, but during the four months preceding admission the patient had been forced to have recourse to enemata in order to procure a movement. The abdomen was flaccid, neither retracted nor distended. Over the inner extremities of the seventh and eighth ribs, two inches below and to the left of the xiphisternum, there was a marked circumscribed swelling, which gave a resonant note on percussion. The area of stomach resonance was somewhat but not greatly increased. The liver dulness was normal. Since becoming ill, the patient had suffered from frequent giddiness and palpitation, but there were no other signs connected with the circulatory system. Lastly, on admission he was much wasted and profoundly anæmic, the cheeks being somewhat flushed.

On admission, patient, who complained of pains in the legs and ankles, was put on sodium salicylate with one minim of creasote. His diet consisted of milk, beef tea, gruel, and mutton, the meat being finely minced, as he was quite unable to masticate owing to the condition of the teeth mentioned above. Under this treatment he improved considerably; the pain in the ankles and legs disappeared, and he slept well, and retained his food for a longer period.

On the fifth day, the patient feeling very sick, his stomach was washed out, a very large quantity of greenish fluid resembling the previous vomit being removed. He was much benefited by the operation, retaining his food until the following day, when at 11 p.m. he again vomited. This time the washing out was attended by even better results than before, the patient having no sensation of nausea until the twelfth day (a period of one week). During this time his condition greatly improved; the feelings of illness and despondency, of which he had greatly complained, left him; he slept and eat well, and appeared to take more interest in his surroundings. His only complaint at this time was of some general aching pains in the arms and legs.

On January 5th a quantitative examination was made of the blood, with the following result:—Red corpuscles, 3,240,000; White corpuscles, 18,000; Hæmatoblasts, 40,000.

On the 15th of January it was noticed that the superficial veins of both arms were extensively thrombosed, the œdema being however very slight.

On the 16th an attempt was made to wash out the stomach, but the patient vomited several pints of a dark brown fluid containing a large amount of blood, no free HCl, but abundant lactic and butyric acids. Microscopically, there was a quantity of particles of undigested food, but no sarcinæ were found. There was abundant saprophytic growth.

From this time his condition became worse; on one occasion when he got out of bed he fainted, and only recovered after a considerable time. He complained of continuous pains in

the arms and legs, and the thrombosis mentioned above extended rapidly to all the superficial veins of the arms and legs, both extremities becoming at the same time œdematous to a marked degree.

On the 23rd a further examination of the blood was made, with these results, viz.:—Red corpuscles, 1,320,000; White corpuscles, 10,000; Hæmatoblasts, 60,000. The red corpuscles were variable in size, some showing a tendency to assume abnormal shapes: there were no nucleated cells seen, but all were very pale in colour. The white corpuscles showed no abnormality.

A marked change for the worse occurred on January 24th, from which time the patient's condition grew rapidly worse. He lay low in the bed, his face denoting extreme anxiety. He complained incessantly of low and desponding feelings, and of fear of imminent death. Symptoms of extreme weakness of the circulation showed themselves, the pulse being scarcely felt at the wrist, and the superficial capillaries about the eyes and nose being injected.

In this condition the patient remained from January 24th, taking scarcely any food, not vomiting, and at the last apparently not appreciating his state, until the 31st when he died, having been in the hospital exactly one month.

Post mortem.—The stomach was found to be dilated, and the pylorus much stenosed by a malignant growth, which had also infiltrated the walls of the stomach in its neighbourhood. Secondary growths were found in the pancreas only. There was marked fatty degeneration of the liver, kidneys, and heart, and the supra-renal capsules were unusually pigmented although unaffected by growth. The veins of both arms were found to be thrombosed.

ACUTE SUPPURATION OF MIDDLE EAR,
SEPTIC THROMBOSIS OF INTERNAL JUGULAR
VEIN AND PYÆMIA WITHOUT INVOLVEMENT
OF THE MASTOID ANTRUM.

UNDER THE CARE OF GILBERT BARLING, F.R.C.S.
SURGEON TO THE BIRMINGHAM GENERAL HOSPITAL.

E. B., f., aged 20, was admitted to hospital on February 18th, 1895, with the following history:—A month before, she felt poorly and suffered from pain in the left ear. In a few days matter discharged from this ear, and continued to do so until six days before admission, when the discharge ceased and the severe pain returned. During the latter period she was very feverish.

On admission, the girl looked very ill, the face was flushed, the lips and tongue dry, T. 105·5°, P. 160. There was a perforation of the left membrana tympani, but only a trace of pus in the ear. There was no redness, tenderness, or œdema over the mastoid, nor any tenderness or thickening over the internal jugular vein. Despite the absence of local signs, as it seemed probable that the girl was suffering from pyæmia dependent upon middle-ear suppuration, the mastoid antrum was explored on the day of admission. Only a small but healthy antrum was found at some depth, most of the mastoid process was then chiselled away to determine if there were any focus of pus elsewhere, and finally the floor of the middle cerebral fossa was opened, but in neither situation was pus found, so the wound was closed and the patient returned to bed.

The day following, she suffered from pain in the abdomen and diarrhœa, and crepitation was detected at the bases of both lungs. These conditions continued during the next two days, and, in addition, marked tenderness in the right iliac fossa was found, with enlargement of the spleen, so that a suspicion of typhoid fever arose. The temperature,

however, was most erratic, fluctuating rapidly from 104° or 105° to 99° , and though there was no rigor, there was at times profuse sweating. Extreme tenderness was complained of in the left shoulder three days after the operation. The crepitations in the lungs were now heard widely over both bases, and moist sounds were heard over the whole of both lungs, but there was no distinct dulness or bronchial breathing anywhere, nor was there any expectoration. The patient died on the seventh day after admission.

Autopsy.—Cranium, membranes and brain perfectly healthy. Pus in the left middle ear, but none in the bones around. In the left lateral sinus was a purulent thrombus, which extended down the jugular vein to its termination in the innominate. Before this was disturbed, the neck was carefully palpated over the line of the vein, but no induration or thickening could be felt, the explanation no doubt being the softness of the thrombus and the absence of thickening of the vein walls. Lungs: Scattered foci of suppuration in the left near the surface of the lower lobe, and near the root some pneumonia also. The right lung was pneumonic only. The right kidney was almost destroyed by a pyo-nephrosis.

PERISCOPE.

REPORT ON URINARY AND RENAL DISEASES.

BY ROBERT SAUNDBY, M.D., F.R.C.P.

PHYSICIAN TO THE GENERAL HOSPITAL AND PROFESSOR OF MEDICINE
IN MASON COLLEGE.

Charrin and Carnot. *Diabetes and Microbes*. Proceedings of the Biological Society of Paris.—The *Medical Week*, 1894, pp. 259 and 532.

It is well known that ascending infection of glands takes place, and glands may be infected experimentally by injecting infective matter into their excretory canals. Charrin and

Carnot have endeavoured to set up diabetes in the dog by injecting into the pancreatic duct the coli-bacillus, staphylococci, and the bacillus pyocyaneus, all of which are found as parasites in the digestive tract. Out of nine operations only one succeeded, the animal developing emaciation, polydipsia, polyuria, and glycosuria twelve days after the injection, the amount of sugar being very small at first, but increasing until it reached seven grammes in the twenty-four hours.

M. Kaufmann. *Results of fresh experiments undertaken to elucidate the mechanism of Normal Glycæmia and Diabetes Mellitus.*—The *Medical Week*, 1895, p. 32.

Kaufmann maintains that he has shown that the sugar-forming function of the liver is influenced by—1, the internal secretion of the pancreas; 2, the nerve action transmitted to the liver by the hepatic nerves. But he has found while puncture of the fourth ventricle does not produce hyperglycæmia and glycosuria when the nerves to the liver and pancreas have been previously cut, yet if the animal was previously hyperglycæmic and glycosuric, these are increased by the puncture. He explains this fact by supposing that the puncture acts on other tissues which, although not themselves able to manufacture sugar, manufacture some substance which excites the hepatic activity.

In the discussion, Dr. Gleg recalled the fact that Reumann and Rial claimed to have shown that the puncture of the fourth ventricle determines the formation of a large quantity of diastase by the lymphatic endothelium, which substance facilitates the manufacture of sugar by the liver, and Prof. Kaufmann's results appeared to confirm their views.

M. Kaufmann. *On the Pathology of Diabetes Mellitus.*—The *Medical Week*, 1895, p. 73.

He compares the formation and consumption of sugar to the supply and consumption of oxygen in the body; the former processes are the work of special organs which are regulated by the demands of the tissues; the latter are vital phenomena

inherent to the life of the cells; in other words, these consume oxygen and sugar in order to work, they do not work to consume oxygen and sugar; therefore it is unreasonable to regard changes in the amount of sugar in the blood as due to any other cause than to variations in the quantity formed by the liver. In hibernating animals the sugar decreases considerably in the blood during their winter sleep, but rapidly increases when the vital processes regain activity, a fact not explained by the theory of lessened combustion causing hyperglycæmia. In truth the sugar-forming function of the liver adapts its activity to that of the consumption of sugar in the tissues. Chauveau and he have shown that in the horse the glycæmia increases under the influence of physiological labour, especially of muscular exertion, and this can only be explained on the assumption that every physiological exertion stimulates the sugar-forming function of the liver. Again, hyperglycæmia is constantly observed during digestion even when the food does not contain carbohydrates capable of being converted into sugar in the intestine; this sugar in the latter case is manifestly the result of the hypersecretion of glucose in the liver, but when carbohydrates are present is derived directly from them. The liver has therefore this regulator action, secreting sugar when required, and at other times storing it up as glycogen. But the storing capacity of the liver has limits which may be exceeded, and hyperglycæmia and glycosuria result from the excess of sugar which reaches the liver by the portal vein. The pancreas aids the liver in this function of retaining sugar in the form of glycogen and perhaps fat, while it moderates the hepatic sugar-forming function. Chauveau and he, on analysis of arterial and venous blood found no perceptible difference in the consumption of sugar in diabetic and healthy organs, and when the liver was isolated by tying all its blood-vessels the sugar disappeared from the blood of both animals at the same rate, and on restoring the hepatic circulation the original proportion of sugar in the blood was soon re-established.

R. Lépine. *The production of the Glycolytic ferment.*—The *Medical Week*, 1895, p. 56.

R. Lépine and F. Martz. *Sur le ferment glycolytique produit artificiellement aux dépens de la diastase du malt ou du pancréas.*—*Arch. de méd. exp.*, Vol. vii., 1895, p. 219.

R. Lépine. *A new treatment of Diabetes.*—The *Medical Week*, 1895, p. 259.

In the first of these papers Prof. Lépine describes the production of glycolytic ferment from the pancreas of a dog by crushing the organ aseptically, macerating for two or three hours at a temperature of 38° C. in 100 cc. of water mixed with 20 cc. of sulphuric acid, after which the acid is neutralised with soda, 50 centigrammes of glucose added, and the mixture left to stand for an hour at the same temperature. At the end of that time a considerable quantity of sugar has disappeared, much more than would have been the case if the glucose had been added to a maceration of fresh pancreas, proving the production of a glycolytic ferment, just as Heidenhain's trypsin develops in pancreas macerated in an acid solution. He believes this ferment is produced from the saccharifying diastase of the pancreas. If maltine is purified and macerated for two or three hours with 0.1 per cent. sulphuric acid, it loses its saccharifying power and develops glycolytic properties, and similar results are obtained by the same methods of treating salivary diastase. Pancreatic juice obtained by Pavlow's method (peripheral excitation of the vagus) can also be modified in the same way, and during the flow of the secretion the blood of the pancreatic loses the glycolytic power it possesses when the secretion is not flowing.

In the second paper the methods for making the glycolytic ferment are exposed in detail. Five grammes of malt diastase are added to a litre of water acidulated with one gramme of sulphuric acid, and the mixture allowed to digest at a temperature of from 35° to 38° C. for two or three hours; it is then neutralised with bicarbonate of soda. The liquid will be found to have its power of saccharification and to have attained gly-

colytic properties equal to 0.40 to 0.60 grammes of sugar. Careful experiments have shown the above conditions give the best results.

In the third paper Lépine describes the results of administering doses of one litre daily of the malt glycolytic ferment solution prepared as already described. In a woman of 64, passing daily 140 grammes of sugar, this fell under treatment to 90, rose on discontinuing the ferment to 131, and fell on its resumption to 87. In a stout man of 44, passing 41 grammes of sugar, the ferment reduced the amount to 11. In a woman of 48, passing 116 grammes of sugar, this fell under treatment to 80; and lastly, in a woman of 47, the sugar was reduced from 257 grammes to 124. He states that the remedy is perfectly harmless and not in the least disagreeable.

F. Hirschfeld. *Diabetic Coma*.—The *Medical Week*, 1895, pp. 191 and 251.

In a paper read before the Society of Physicians in Berlin Hirschfeld referred to the fatal coma which has so often followed operations on diabetic subjects. While not attributing it to the use of chloroform he thought ether the safer anæsthetic. Acetonuria should be looked for and its presence regarded as of grave import. The diet should be carefully regulated, and fats and alcohol made to play a very important part. Treatment, and especially the alkaline infusions recommended by Stadelmann have no effect. In the discussion which followed Prof. Fränkel agreed in the uselessness of alkaline infusions. Dr. Stadelmann considered the ferric chloride reaction (diacetic acid) as of more significance than acetonuria, and referred to the presence in the urine of excess of ammonia, 3, 5, 8, and even 15 grammes in 24 hours; this latter occurrence was due to the absence from the urine of hydroxybutyric acid; he maintained that alkalies are useful, and should be used in sufficient quantities to counteract the excess of acid in the blood. In reply Hirschfeld said he used perchloride of iron to detect acetone, but he had invariably triturated both the acetone and the diacetic acid. He admitted that cases had come under his

observation with marked acetonuria (4 to 5 grammes daily) whose condition was fairly satisfactory. He could not accept Stadelmann's acid theory. He had found alkalies useless, and had given as much as 10 grammes (150 grains) of bicarbonate of sodium without effect. Stadelmann said the dose was too small, and bicarbonate of sodium the least useful of alkalies; he employed bicarbonate of sodium deprived of its carbonic acid by citric acid, dissolved in fennel water sweetened with saccharine. He gives 15 grammes of bicarbonate of sodium in this way three or four times a day, with the same quantity of soda water, and pushes it until the urine is alkaline. Hirschfeld said he had begun by using Stadelmann's solution, but had reverted to bicarbonate of sodium as it seemed to be better borne by the patients. At the next meeting the discussion was continued by Klamperer, who said he had found that there was a constant relation between the amount of ammonia and of organic acids in the urine; the more ammonia the more acids; and also that the smaller the proportion of CO_2 in the blood the greater the quantity of acid it contained. Nevertheless he did not think this pointed to the conclusion that the coma was caused by acid intoxication, but attributed it to the presence of toxins formed by the decomposition of albumens. The failure of alkalies argued against the acid theory. He approved of fats, but said they sometimes disagreed, and he preferred milk and læyulose. Alcohol could only delay the fatal issue. Weintraud said some patients tolerate considerable quantities of fat for a long time, and it was a mistake to suppose that abstinence from carbo-hydrates could not be borne. He referred to the great success obtained by Prof. Naunyn from a vigorous observance of a diet entirely free from carbo-hydrates. Leyden said he was in the habit of allowing a certain amount of carbo-hydrate as the majority of patients were unable to support a strict diet. He thought strict diet led to the occurrence of dyspepsia and tended to favour the appearance of coma. Senator agreed in the uselessness of alkaline infusions when coma was imminent. In such circumstances he gave carbo-

hydrates and resorted to drastic purges in accordance with the practice of English physicians. Hirschfeld finally agreed as to the value of purging, and said with respect to carbo-hydrates, that 100 grammes daily was sufficient.

J. Dreschfeld. *Acute Diabetes due to Cancer of the Pancreas.*—*Medical Chronicle*, New Series, Vol. iii., p. 14.

Dreschfeld records a case in a woman aged 41; which commenced two months before admission with sharp shooting pains at the epigastrium, radiating to flanks, and followed by vomiting. About a week before admission the belly began to swell, but there was no jaundice and the vomiting had not recurred. On admission there was ascites and an ill-defined resisting ridge about two inches above the umbilicus; there was no thirst, the urine was not increased in amount, it contained 20 grs. of sugar to the ounce, acetone and aceto acetic acid, but no albumen. Death followed nine days after admission from syncope following obstinate vomiting. The pancreas was infiltrated with cancer, and its ducts dilated and stuffed full of calculi. Little or no normal pancreatic tissue could be detected, and the growth extended in the most irregular manner into the surrounding parts at the posterior wall of the abdomen. The liver contained several small secondary deposits. There was a large hæmorrhage into the omentum. The stomach was congested in parts, but free from growth.

N. S. Davis. *Diabetes Mellitus.*—*American Journal of the Medical Sciences*, July, 1895, p. 29.

Davis says that observation extending over fifty-five cases of diabetes suggests that there is a seasonal variation of the disease in the United States, where it is most likely to occur in March, April, July, and November, or to undergo exacerbations during those months. He appeals for confirmation of this way of thinking to the mortality tables of Chicago; but, as printed in the paper, they do not seem to bear this out very conclusively, as the average of the above four months is 42.75 and of the other eight months 41.75; while if we take January, May, September, and October, we get an average of 47.5. He also

asserts that there is an increased mortality in the winter months, namely, December, January, February, and March, which have a mortality of 45·75; but May, July, September, and October have almost the same, viz., 45·50, so that the reasoning hardly convinces us.

K. Grube. *The association of Diabetes with Psoriasis.* Clinical Society's proceedings.—*Brit. Med. Journ.*, 1895, Vol. i., p. 587.

Grube has recorded four cases of this association, which he does not regard as being merely a coincidence, for in all the psoriasis got better as the diabetes got worse; while if the diabetes improved, the skin became more troublesome. In all, the psoriasis had preceded the diabetes.

K. Grube. *Tabes oder Diabetes Mellitus.*—*Neurologisches Centralblt.*, 1895, No. 1.

It has been generally admitted that in the differential diagnosis of those cases of peripheral neuritis which so much resemble locomotor ataxy they have been called pseudo-tabes, the preservation of the pupil reflex to light is a valuable point, because, although often present in true tabes, it is never absent in neuritis. Unfortunately Grube records three cases of diabetic pseudo-tabes (neuritis) in which the pupil reflex was absent, the condition being confirmed in one instance by Mr. Marcus Gunn.

K. Grube. *Gastrische Krisen bei Diabetes Mellitus nebst Bemerkungen über die Behandlung der Verdauungsstörungen der Diabetiker.*—*Münchener Med. Wochenschr.*, 1895, p. 186.

Grube describes the occurrence of gastric crises in diabetes resembling the attacks which occur in the course of tabes. They come on suddenly without warning, setting in with violent epigastric pain, flatulence, and eructation, often followed by nausea and vomiting, cramps in the legs, dryness of the mouth, slight fever, and quick pulse. The urine contains sugar and acetone, but neither diacetic nor oxybutyric acid. He recommends moving the bowels by a saline aperient or an enema, and hot compresses to the abdomen. The patient can at first take

nothing by the mouth. He thinks the attacks, though not in themselves dangerous, indicate the approaching termination of the case. He says the glands of the stomach are atrophied, and recommends the use of alcoholic beef pancreas after meals to combat the dyspepsia due to this cause.

F. Hirschfeld. *The indications and contra-indications of Alcohol in Diabetic Subjects.*—*The Medical Week*, 1895, p. 96.

His experiments showed that diabetic patients taking 60 to 70 grammes (about $\frac{3}{4}$ ii.) of alcohol daily burned off the whole of it, and consequently it acted as a food and saved the tissues of the body. Polyuria, glycosuria, and acetonuria were not in the least increased. It may do harm where there is marked cardio-vascular sclerosis or much albuminuria. It is not necessary in stout patients, whose glycosuria can be readily suppressed by restricted diet; but if they have been in the habit of taking a certain amount of such beverages, they may be permitted to take from one-fifth to two-fifths of a litre (about six to twelve ounces) of light wine daily. On the other hand, greatly emaciated patients who pass a great deal of sugar even when abstaining from carbohydrates, require fat in the form of butter, and alcohol in the shape of a bottle of good claret or an equivalent amount of brandy or rum, and the absolute necessity for alcohol should not allow the existence of vascular sclerosis or moderate albuminuria to contra-indicate its use.

R. T. Williamson. *A Bread Substitute for Diabetic Patients.*—*Brit. Med. Journ.*, 1895, Vol. i., p. 922.

Williamson recommends the following formula for diabetic cakes:—Aleuronat 2 oz., desiccated cocoa-nut powder 2 oz., 1 egg, and a little water sweetened with a saccharin, are simply mixed together, divided into cakes, and baked. They are most palatable when newly made. Aleuronat can be obtained from R. Hundhausen, Hamm, Westphalia, in parcels containing $4\frac{1}{2}$ kilos. for 7s. Fine desiccated cocoa-nut powder is supplied by Lyon and Sons, 4, Bath Passage, Birmingham; but it contains a little sugar, which may be got rid of by fermentation; or sugar-free cocoa-nut can be obtained from Callard and Co., of 65, Regent Street, London, W.

K. Grube. *Einige Beobachtungen über die Bedeutung des Kalkes bei Diabetes mellitus.*—*Münchener Med. Wochenschr.*; 1895, No. 22.

Grube reports the case of a young English manufacturer under the care of Dr. Pavy and himself for diabetes, who after his return home took, on the advice of one of his workmen, also diabetic, a heaped-up teaspoonful of powdered egg-shell daily, and under this treatment improved considerably in his general health, although the glycosuria remained undiminished. Grube has suggested as a substitute for egg-shell a powder consisting of 93 parts of carbonate of lime and 7 of phosphate of lime, and has treated one patient with a teaspoonful daily with good results. He refers to the known excessive loss of lime from the body in diabetes, caused by the great increase in the earthy phosphates in the urine; and he considers that it is possible that this loss is in part responsible for the weakness. He refers to the large amount of lime contained in milk, and thinks that this may be the reason why some authorities (*e.g.*, Saundby) attach importance to the addition of a certain amount of milk to the diet.

R. Saundby. *Diabetes Insipidus.*—*The Practitioner*, 1895, vol. 54, p 39.

Saundby draws attention to the fatal termination of certain cases of diabetes insipidus by cystic degeneration of the kidneys, and points out that this danger may be recognised, not only by the presence of a trace of albumen, which is not a constant symptom, but more conclusively by the diminution in the urea excretion. When the kidneys are normal the urea excretion in diabetes insipidus is above the average and may be enormously increased, but when the kidneys are cystic it sinks to less than half the normal amount. In the case recorded there was also pain on pressure in both hypochondria.

This cystic degeneration is certainly a consequence of the gradual over-distension of the urinary passages by the enormous quantity of urine secreted.

Walter F. Clark. *A case of Diabetes Insipidus treated by ingestion of supra-renal glands.*—*Brit. Med. Journ.*, 1895, vol. i., p. 1086.

Clark treated a woman, aged 39, passing four gallons of urine in twenty-four hours, by the administration of supra-renal glands (first the raw gland, then Burroughs and Wellcome's tabloids), with the result that when she takes the medicine the urine is moderate in amount, and when she leaves it off polyuria, thirst, and weakness return. The urea in this case was under 300 grains.

S. Felsenthal and L. Bernhard. *Ueber Nephritis bei Magen-darmerkrankungen der Kinder.*—*Archiv f. Kinderheilk.*, xvii., p. 222.

The authors say that children with gastro-enteric troubles often have partial, sometimes total suppression of urine; albuminuria is common but not constant; casts and renal epithelium sometimes are present, but not always even when there is albuminuria. Œdema of the extremities and face occur, but do not necessarily depend on the nephritis. The anatomical changes in the kidneys resemble those described by Aufrecht, Leyden, etc.; in cholera kidneys—viz, plugging of the straight tubes, Henle's loops and collecting tubes, dilatation of the convoluted tubes with flattening of the epithelium, and parenchymatous changes.

H. v. Ziemssen. *Klinisches zur Lehre von der chronischen Nephritis.*—*Deutsches Archiv f. klinische Medicin*, Bd. 55, p. 1.

Von Ziemssen relates a case of chronic nephritis which was under his observation for four years, and at first presented the clinical picture of parenchymatous nephritis, later of interstitial nephritis, but eventually improved in general health and was able to resume work. He thinks that there are many cases of nephritis which run a comparatively favourable course. At present it is so difficult to recognise which are the cases that may do well, and he suggests that a study of the hæmoglobin and the blood pressure may throw light upon these questions. He believes that in some of these cases only a part of the kidney is affected.

Allen A. Jones. *Gastric Conditions in Renal Disease*.—*New York Med. Journ.*, January 19th, 1895.

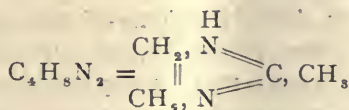
Jones finds that the subjects of chronic Bright's disease commonly suffer from chronic gastritis, also from hyperchlorhydria without gastritis; in other cases there is anacidity with fermentation and formation of lactic, acetic, and butyric acids. Severe gastralgia is generally caused by hyperchlorhydria. Renal calculus causes reflex vomiting, and a displaced right kidney may give rise to dilatation of the stomach.

Charles E. Simon. *The Modern Aspect of Indicanuria*.—*Amer. Journ. of the Med. Sciences*, July, 1895, p. 48.

Simon, at the end of a long historical account of the subject ending with the present standpoint, viz., that indican is a product of intestinal putrefaction brought about by the entrance of putrefactive organisms into the digestive tract with the food, tries to establish a relation between its presence in the urine and the amount of free hydrochloric acid in the stomach; in other words, that gastric subacidity favours intestinal putrefaction and is the common cause of indicanuria.

E. Grawitz. *Observations on a new Uric Acid Solvent in Gout*.—*Deutsche Med. Wochenschr.*, 1894, No. 41.

This substance, according to Prof. Ladenburg, is identical with ethylene-ethenyl-diamine, and possesses the following formula:—



Its dose is from thirty to seventy-five grains daily, and it is best administered in aerated water. Grawitz publishes careful notes of two cases of gout treated by this means, and under its use the gouty symptoms subsided, and the tophi were reduced in size.

REPORTS OF SOCIETIES.

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held 17th September, 1895, Mr. D. CORBET in the chair.

Cases.—Mr. J. L. Stretton read notes of a case of so-called hermaphroditism. Martha F., aged 67, was born in a small village and being pronounced a female, he was brought up accordingly and still believes that he is a woman. The condition of the genitals is one of hypospadias, the under part of the urethra being absent from the orifice to the junction of the penis and scrotum, where the outlet is now situated; otherwise he is quite naturally formed, and but for regular shaving would have a well marked beard and moustache. He asserts that he has never experienced any sexual appetite, and that he has lived alone in a hovel, and worked in the fields. He is at present an inmate of one of the female wards of the Kidderminster Workhouse, by direction of the Guardians and the local Inspector, who still maintain that he is a woman, and the Local Government Board see no reason to interfere.

Mr. P. E. Davies, showed the kidneys, from a case of purpura, which exhibited numerous hæmorrhages. The boy, who was aged 5 years, was admitted into the Children's Hospital in a very exhausted condition, and rapidly became comatose, dying 24 hours later. The urine was normal, and the *post mortem* showed no change in the brain.

Mr. W. Moore remarked on the rarity of coma in this disease, and Mr. Kitson mentioned that several cases of purpura had recently occurred in the same locality as this one, two of them in the same house.

Intestinal Obstruction.—L. M., aged 17. There is no history of any definite diseases, no traumatism, no history of rupture.

He had had pain off and on about his "stomach" since childhood. Last Easter he had a severe attack of abdominal pain and sickness, but no obstruction, and the vomited matter was not fæcal, he was laid up for six weeks and has remained well until the present attack.

On August 28 he was attacked with severe pain while at the w. c.; he passed a hard formed motion, the pain continued, and he vomited; the following day the vomited matter was fæcal. His doctor treated him with hot applications and injections without effect.

September 2nd. The patient lies on his back with the knees drawn up, the breath has a fæcal odour. Pulse 84, tongue furred and moist, the abdomen does not move on respiration, it is slightly distended and there are no signs of hernia, there is a feeling of resistance about the right iliac region, and it is dull on percussion.

Mr. J. L. Stretton opened the abdomen in the middle line, no fluid escaped and on introducing the hand a band was at once felt and divided. There were several hard lumps in the large intestine near the seat of obstruction, and it was glued to the anterior abdominal wall by recent adhesions. Owing to the state of the patient the operation could not be prolonged.

He was more comfortable the following day and the vomiting ceased, but he became more collapsed and died in the evening after a severe attack of vomiting. No fæces or flatus had passed.

Post mortem 12 hours after death. The abdominal wound appears healthy, there is no recent peritonitis. The root of the band is about the diameter of the little finger: it had extended from midway above the transverse colon (attached to its mesentery), across it, binding it down, and was attached to the mesentery of the ileum near the cæcum. There were several recent adhesions between the colon and abdominal wall. The obstruction had been relieved by the operation.

The case was of interest on account of the extreme rarity of the condition. Treves speaks of it as a pathological curiosity.

Dr. Evans showed a girl, A. G., age 14, from whose right leg the whole length of the diaphysis of the tibia had spontaneously exfoliated. It was only held *in situ* by a small band of granulation tissue and was easily removed.

She has made an excellent recovery and has a useful limb, new bone being formed. A water-colour drawing of the condition was exhibited.

Mr. J. L. Stretton read a paper on osteotomy with notes of 108 operations

BRITISH ORTHOPÆDIC SOCIETY.

A meeting was held at the National Orthopædic Hospital on Tuesday, July 30th.

Mr. Noble Smith showed a case of complete recovery from Compression Paraplegia in which laminectomy had been performed. He also showed specimens, amongst them a portion of the Vertebral Column of an infant who had suffered from spinal caries and general tuberculosis.

Mr. Robert Jones brought forward specimens showing chronic Hypertrophy of the Fingers in a child of 18 months. From microscopical specimens the overgrowth seemed to be fatty and not lymphatic in nature. He also exhibited to the Society three photographs of cases of Fracture of the Great Trochanter in which the ultimate results had been very good.

Mr. Newbolt showed photographs of a case of Genu Recurvatum in a child. By forcible traction and flexion at intervals combined with an anterior angular splint the limb was brought into the improved position illustrated.

Mr. Luke Freer brought forward a patient, aged seven, on whom he had operated for most pronounced Congenital Talipes Equino-varus. The deformity was completely rectified by appropriate tenotomies, massage, and manipulations.

Mr. J. Jackson Clarke demonstrated specimens of Spina Bifida Occulta, Double Congenital Dislocation of the Hip, Congenital Talipes Equino-varus, and Atlo-axoid disease.

Dr. N. Gratton exhibited his improved Osteoclast, and stated that he had operated on about 220 cases with it and had never lost one.

Mr. A. H. Tubby communicated a paper on Original Observations on the Union of Tendon with their Practical Bearings.

Messrs. Jackson Clarke and Muirhead Little followed with remarks.

A discussion on the Treatment of Abscess in Pott's Disease was initiated by a paper read by Mr. Tubby, in which Messrs. Robert Jones, E. Muirhead Little, J. Jackson Clarke, and Luke Freer, took part.

REVIEWS.

THE PRACTICE OF MASSAGE.*

MOST of our English works on massage are of the nature of hand-books, and appeal more to the lay pupil than to physicians and surgeons; but Dr. Simons Eccles, whose name is well known to most of us, not only as one of the first authorities in the current literature of masso-therapeutics but also as a past-master in its practice, has now contributed a monograph written entirely from a professional standpoint, and dealing exhaustively with the physiological effects and therapeutic uses of massage. This accounts doubtless for the absence of plates, whereby, we venture to think, he would have better explained the different manipulations described in the first chapter than by letter-press alone. For this aspect of the subject, however, the works of Schreiber, Busch, Stretch Dowse, and others may be studied with advantage.

Dr. Eccles lays great stress on the necessity of a thorough knowledge of the physiological effects of massage by those

* *The Practice of Massage: its Physiological Effects and Therapeutic Uses.* By Simons Eccles, M.B. Pp. 363. London: Macmillan and Co, 1895.

prescribing it; and, while allowing that trained laymen and women may be entrusted with the manipulative work in most cases, he insists, and rightly, that there are occasions, as in the more delicate massage of the abdominal viscera, when the operation must be performed only by the doctor himself. This advice is of the utmost importance in this country, where not only do patients confound massage with the up-and-down rubbing of the "handy-woman" and the invigorating but unscientific pummelling of the Turkish bath shampooer, but we have medical authorities asserting that they can impart all the knowledge necessary to a sharp nurse in a few easy lessons. Considerable space is devoted to the consideration of abdominal massage, especially in connection with constipation, chronic diarrhoea, and other disorders of the digestive tract. In this connection the value of the salol test for ascertaining the length of time occupied by intestinal absorption, and carefully arranged tables of the results in obstinate constipation, and diarrhoea associated with neurasthenia, are given, as well as reports of individual cases treated by the writer.

Space will not allow of our even touching upon the majority of the diseases in which massage has been found beneficial, many of which, as the various paralyses, writers' and other trade cramps, fractures, sprains, myalgia, rheumatism, neuralgia, sciatica, etc., are beginning to be better understood and appreciated than formerly; as also the combination of kinetics with massage in scoliosis and rachitic deformities. Chorea, asthma, and heart affections, and their treatment by masso-therapeutics are fully discussed; and the cautions necessary to be observed in Oertel's and Schott's methods of heart gymnastics. From personal experience in our own family, we can endorse the author's statements on the beneficial effects of massage in asthma. He says: "If, as in Oertel's plan of heart massage, we are unable to give a satisfactory explanation on physiological grounds of the therapeutic effects of chest massage in cases of asthma, it is but another instance of 'science following art with limping pace.' The facts are before us, though the reasons for their existence are not yet intelligible."

Many of our readers may remember the admirable demonstrations given by Dr. Simons Eccles some years ago at the Annual Meeting of the British Medical Association. The recent strictures appearing in the organ of that Association are also doubtless fresh in their minds. These articles, dealing as they did with certain flagrant abuses, we think were practically futile (and our surmise is borne out by the advertisements still appearing in certain London papers from charlatans of the same class). We sincerely trust that the Association will follow up the subject on a constructive basis, and so place masso-therapeutics on its proper footing with the profession and with the public; and in the meantime we must congratulate Dr. Eccles on having placed before us the most complete and scientific contribution that has yet appeared on the subject from the pen of an English exponent of the art.

BURDETT'S HOSPITAL AND CHARITIES ANNUAL.*

It is impossible not to admire the enormous amount of energy and labour that is required every year to produce this annual. The clear manner in which the host of minute details concerning all philanthropic institutions, not only of the United Kingdom, but also of the Colonies and America are marshalled and abstracted, is admirable in the extreme. This is certainly the book to apply to for information on any point concerning hospitals or charitable institutions. In addition to the statistical portions of the volume there is a good deal of interesting matter relating to hospital expenditure, organisation, and construction, while two chapters are entirely devoted to the Saturday and Sunday collections. Referring to the Birmingham Saturday Fund the Editor writes—"At the present time it is an open question how far, if at all, the £11,000 collected from the Hospital Saturday Fund can be regarded as a free gift, although

* Burdett's Hospital and Charities Annual; being the Year-book of Philanthropy. By Henry C. Burdett. London: The Scientific Press. 1895.

no tickets are actually issued in exchange for this money. It has always been maintained by those interested in the Birmingham Fund, that the magnificent sum there raised on Hospital Saturday is handed to the hospitals as a free gift, for the working classes provide for the hospital wants of the employés in the respective workshops, by subscribing direct to the hospitals and by the purchase of tickets every year."

Mention is then made of a discussion that took place on this point in a medical journal, and he concludes, "As a result we hope that the Committee of the Hospital Saturday Fund, with Mr. Smedley's assistance, will henceforth publish each year adequate and full accounts, which will enable everybody to ascertain how far, if at all, a free gift is made to the hospitals by the Birmingham Hospital Saturday Fund. The matter should no longer be left in doubt. Until the points are cleared up by the publication of all the facts no one is in a condition to state what amount the working classes of Birmingham contribute as a free gift to the hospitals of their town." We gather from this that Mr. Burdett holds the view that when a working man pays a certain sum to a hospital and receives an adequate return himself in the way of treatment, the term "free gift" scarcely enters the transaction. We believe that this view is shared by others.

The editor criticises somewhat severely the method to be adopted for the ventilation of the new General Hospital, but his remarks on this subject are, to say the least of them, premature.

THE CARE OF THE BABY *

No better book of its kind has come under our notice for some time than this manual by Dr. Crozer Griffith. It is readable, clear, and concise, and has the great merit of not attempting too much.

* The Care of the Baby : a Manual for Mothers and Nurses. By J. P. Crozer Griffith, M.D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania. Philadelphia : Saunders. 1895.

The first chapter discusses the hygiene of pregnancy, the method of calculating the date of confinement, and similar data. The characteristics of a healthy baby are considered in the second chapter, and the growth of its mind and body in the succeeding one. The chapters which follow relate to the methods of bathing, dressing, and feeding children of different ages; to the hours for sleeping; to physical and mental exercise and training; and to the proper qualities of the children's various nurses and rooms.

Many of the illustrations are really excellent, and save a considerable amount of letterpress. As instances, we would mention the diagrams of the stomach at birth, and of the various kinds of under-garments for infants; the picture of the "creeping pen," and the admirable plate of the different kinds of worms which may trouble children.

Nothing in the book is more satisfactory than the manner in which the author simplifies points which are apt to be looked upon by a young mother as too scientific, and therefore too difficult for her comprehension. His references to thermometers and measuring-glasses, etc., bear such a matter-of-fact aspect that they appear to the reader as much a part of the nursery furniture as the bassinette and pincushion; and the sterilisation of milk, we are glad to see, is treated as if it were a process as customary as the boiling of the water before making a cup of tea. This is of course as it should be.

The list of antidotes and the simple instructions as to what to do for slight ailments or accidents "before the doctor comes" are brief and intelligible; and although the formulæ at the end of the book are unnecessary for anyone living within reach of a medical man, they would be distinctly of service to anyone travelling or living "up country."

Although this book is intended primarily for mothers and nurses, it will well repay perusal by medical students, as it contains a great deal in which most of them are sadly in need of instruction.

ON THE GEOGRAPHICAL DISTRIBUTION OF TROPICAL DISEASES IN AFRICA.*

DR. FELKIN has published in book form the paper prepared for the Committee of the African Ethnological Congress which assembled in Chicago in 1893, and as an appendix he has added a paper read before the Congress of Hygiene and Demography at Buda-Pesth in 1894.

Taking the appendix first: this illustrates by means of a map the author's method of showing the distribution of disease in any country, a plan which closely resembles the usual one made use of in some of the fuller atlases for demonstrating the distribution of animal life over the larger continents. A symbol is chosen to represent a disease, and is printed once, twice, or thrice over the areas of the country where that disease occurs, the number of the symbols corresponding to the degree of its prevalence.

The book itself consists of two parts. In the first, the author subdivides the continent into eight divisions, each division having approximately the same climatic character throughout. He discusses the climate of each separately, with its effect upon Europeans settling in the division. To anyone thinking of travelling for health in Africa there are many suggestions in these chapters which would prove useful—*e.g.*, the remarks on the most suitable areas for cases of incipient phthisis. In the second part the diseases of tropical Africa are described seriatim. Many of the well-known text-books contain fuller accounts of these diseases than those written by Dr. Felkin, and from his very brief descriptions and scanty hints for treatment, it may be concluded that little is really known about the greater number of them.

* On the Geographical Distribution of Tropical Diseases in Africa, with an Appendix on a new method of illustrating the Geographical Distribution of Disease. By R. W. Felkin, M.D.

THE SURGICAL DISEASES OF CHILDREN.*

THIS book is one of the well-known "Lewis's Practical Series." It is a crown octavo volume of more than five hundred pages, and is written throughout by Mr. Power himself. The work does not pretend to be more than a guide to those who wish to pursue each subject more thoroughly than can be done in a text-book; and the author has wisely appended a list of papers chiefly remarkable for the excellence of the bibliography which they contain, or for their historical interest. The book has been made as practical as possible, and only so much pathology has been introduced as is necessary to show why the modern treatment differs from that formerly employed.

The various methods connected with the treatment of the surgical diseases of children which have proved themselves most successful in the author's hands are briefly yet clearly stated; but a desire of keeping the volume within a reasonable compass has necessitated his dealing with the orthopædic side of children's surgery in a less thorough manner than the importance of the subject demands.

We have read the volume with benefit and with pleasure, and can congratulate Mr. Power on the eminently practical and reliable hand-book he has given to the profession.

A HANDBOOK OF HYGIENE.†

IT is not every book that answers so accurately to the title it bears as this Handbook of Hygiene by Surgeon-Major Davies. It is a pocket volume with soft and pliable leather binding, compact and convenient in shape and form. The enormous amount

* The Surgical Diseases of Children and their Treatment by Modern Methods. By D'Arcy Power, M.A., M.B. Oxon., F.R.C.S. Eng., Demonstrator of Operative Surgery at St. Bartholomew's Hospital, Surgeon to the Victoria Hospital for Sick Children, Chelsea, etc. Illustrated. London: H. K. Lewis. 1895.

† A Handbook of Hygiene. By A. M. Davies, M.R.C.S., Surgeon-Major, A.M.S. London: Charles Griffin and Co. 1895.

of information that it contains has necessitated the use of type so small that the eye soon becomes tired on continuous reading. This is a pity; but had the type been better it is obvious the book would have required condensation or enlargement, and either process would detract from its value as a handy volume on hygiene.

The sections on water and food are particularly good, and the chapters under other headings appear to contain information equal in amount to that comprised in some of the larger volumes on the same subject. The illustrations, taking them all together, are not up to the level of the rest of the publication; some of the bacteriological ones especially are very poor. At the same time it must be admitted, in fairness to the author, that diagrammatical as some of his pictures are they succeed in demonstrating the main points required of them.

As a textbook for examination purposes this handbook will prove useful, but we believe it will be especially appreciated by travellers, or by anyone similarly unable to gain access to larger publications on matters of public health, as a small and convenient volume for reference.

DISEASES OF THE EAR.*

THIS excellent volume, written especially for students and practitioners, places before the reader in a condensed and easily readable form those varieties of aural disease which admit of rational treatment in accordance with the established principles of general surgery. It is not issued as a rival to the numerous exhaustive treatises on aural surgery which have lately appeared. The whole tone of the work is eminently practical, and it is not burdened by numberless useless references to the works of other writers, or by long dissertations on the anatomy and physiology

* Diseases of the Ear. By A. Marmaduke Sheild, M.B. Cantab., F.R.C.S. Eng., Assistant Surgeon and Lecturer on Operative Surgery at St. George's Hospital. With four coloured plates and thirty-four woodcut illustrations. London: Cassell and Co. Lim. 1895.

of the organ of hearing. Brief abstracts of cases are drawn from the author's own note-book to illustrate any particular point of practice, and careful attention is paid to those subjects now so generally coming under the care of the operative surgeon, such as mastoid disease, sinus pyæmia, and post nasal adenoids. The commoner and more important morbid conditions of the membrana tympani and external auditory canal are carefully illustrated in colours, and the numerous woodcuts throughout the volume are well chosen and accurately drawn.

A concisely arranged appendix on aural therapeutics and prescriptions will be found most useful by the busy general practitioner. We can recommend Mr. Sheild's handy volume to the classes for whom it is written; and we venture to think also that some of the "ultra-specialists" in ear disease might with advantage take some of its practical lessons to heart. The name of its publishers is guarantee of the style and character in which the volume is brought out.

INFANCY AND INFANT-REARING.*

IN this excellent little manual the author has brought together a large mass of valuable and important information within a comparatively small compass, and has been successful in expressing himself in fairly simple language not overloaded with technical phrases.

Successive chapters deal with the normal growth and development of the child in the first two years of its life; with the difficulties and problems of infant-rearing; with feeding; and with the general hygiene of infancy, including the special care of new-born and of premature babies. For those cases where artificial feeding is necessary, the different methods of preparing milk, the proper dilutions, "humanising," peptonising, sterilisation, and pasteurisation are briefly and effectively described;

* *Infancy and Infant-rearing: an Introductory Manual.* By John Benjamin Hellier, M.D. Lond., M.R.C.S. Eng. London: Charles Griffin and Co.

and so also are the uses and varieties of other foods suitable for young children. Some popular fallacies—such as the advisability of using “milk from one cow,” and the fear of danger in mixing milks—are mentioned and condemned.

Altogether, the book may be warmly recommended as a useful and judicious summary of all that it is important for nurses and practitioners to know who have to do with the care and management of infants.

The more immediately practical portions of the book—on feeding, washing, clothing, and especially “shortening,” care of the feet, exercise, and so forth—are all terse and to the point, and, if published separately, would be of great service as a guide to mothers, whom it would instruct in many things of which they are in the vast majority of cases woefully and painfully ignorant.

TRANSACTIONS OF THE ROYAL ACADEMY OF MEDICINE IN IRELAND.*

THIS volume contains a large number of papers on medicine, surgery, and allied subjects. The majority of them are short, but at the same time concise and clearly written.

In the section of medicine there are valuable papers on Pernicious Anæmia and Graves' Disease, by Dr. James Craig; and one of considerable interest on Tetany, by Dr. Alfred Parsons.

In the section of surgery is a paper on Nephrorrhaphy and Nephrectomy, by Mr. J. S. M'Ardle, to which is added a table of statistics and references. Drs. Fraser and Birmingham contribute several papers on anatomical subjects, some of which are well illustrated.

In the section of pathology there is an able article on the micro-chemical reaction of cells in their relation to immunity,

* Transactions of the Royal Academy of Medicine in Ireland. Vol. XII. Dublin: Fannin and Co., Grafton Street.

in which the writer, Dr. Alfred Scott, briefly describes the various theories held as to the relation between the body and micro-organisms and their products.

FORMULAIRE DES SPÉCIALITÉS PHARMACEUTIQUES.*

THIS useful little publication represents in some degree our own Martindale and Westcott. But the writers of the *Formulaire* have limited themselves to describing patent or proprietary preparations, with their therapeutic indications, etc., and make no mention of ordinary official preparations. Of course the great majority of articles mentioned consists of French patents, but the better-known German and some English drugs are also mentioned.

Even to the English physician this book may be useful, the excellence of many of the French proprietary preparations being fully appreciated here, and are being frequently prescribed.

The chapter on Pasteur's diphtheria antitoxin is clear and succinct.

The book is well arranged, and a glance suffices to find the desired drug.

A NEW METHOD OF INHALATION.*

THIS is a small book devoted to a description of the treatment of lung disease by inhalation in general, and of a special apparatus devised by the author in particular.

There is nothing very new in what the writer says on this method of treatment, and little or no reference is made to the work of others on the subject. There are many explana-

* *Formulaire des Spécialités Pharmaceutiques.* Gautier and Renault.

* *A New Method of Inhalation.* By W. H. Spencer, M.D. The Scientific Press Lim.

tions of the "physics" of vapour thrown in, which do not seem to add to the usefulness of the book.

The description of the author's own apparatus is clear, and we do not doubt that it is efficient. At the same time we must confess to having a strong preference for simpler and less cumbersome methods,

DISEASES OF THE UPPER RESPIRATORY TRACT.*

DR. WATSON WILLIAMS has written a good text-book of the diseases of the nose, larynx, and pharynx. The greater part of the book is of course devoted to the larynx, and strikes us as being a full and careful account of its subject; but the pathology of the nose and naso-pharynx receives also full attention.

The book is freely illustrated, and many of the coloured illustrations give an excellent idea of the conditions which they represent. We can recommend it as an excellent work, of moderate size, for those who wish to gain a more intimate knowledge of this branch of medicine than is to be obtained from the ordinary students' text-books.

YEAR-BOOK OF THE SCIENTIFIC AND LEARNED SOCIETIES OF GREAT BRITAIN AND IRELAND.†

THIS volume forms a scientific directory of the various societies in the kingdom, and contains a large amount of useful information. Not only does it give official details as to membership, meetings, etc., but also serves as an index for the work done by the various bodies during the year.

* Diseases of the Upper Respiratory Tract. By P. Watson Williams, M.D. Lond., Physician to Out-patients, and in charge of the Throat Department at the Bristol Royal Infirmary. Bristol: John Wright and Co.

† Year-book of the Scientific and Learned Societies of Great Britain and Ireland. Charles Griffin and Co. Lim.

Correspondence.

VASCULAR DEGENERATION OF THE VESTIBULE,
OR KRAUROSIS VULVÆ.

To the Editors of the BIRMINGHAM MEDICAL REVIEW.

Sirs,—Mr. Lawson Tait has, I suppose, overlooked the use of the word *κραῦρος* by Aristotle (*De Part. Anim.*), and by Plato (*Timæus*). The former writer uses the term in contrast to *μαλακος*, as in the quotation—

“*μὴ κραῦρον εἶναι ἀλλὰ μαλακωτέρον*”—

(*De Part. Animal*, 2, 9, 13),

and is consequently my authority for the statement in my article on Kraurosis Vulvæ.

I would gladly keep to Mr. Tait's nomenclature of “Vascular Degeneration of the Vestibule,” but the labia minora are quite as much affected as the vestibule, and the popular verdict appears to be in favour of the wider term “Kraurosis Vulvæ.”

I do not see that the adoption of the latter need in any way obscure our thorough appreciation of Mr. Lawson Tait's work on the disease in question.

I should like to add, that the contraction met with in a small, but only a small proportion of aged women (and in a still smaller proportion of cases after operation for removal of the appendages) is indistinguishable from that which follows vascular degeneration. There is therefore no confusion in regarding this contraction, whenever met with, as one and the same pathological condition.

I am, Sirs, yours, etc.,

JOHN W. TAYLOR.

22, Newhall Street, Birmingham,

14th September, 1895.

PUBLISHERS' DEPARTMENT.

New Inventions, Drugs, etc.

We desire to call attention to a new disinfectant—"The Eucalturn Disinfecting Fluid," prepared by the Midland Apothecaries Co. Limited, a most effective Disinfectant for general use. It is highly concentrated and will bear dilution to the extent of 1 part in 100 parts of water. It is claimed for it that it is more effective than Carbolic Acid, over which it possesses the advantage of being absolutely harmless.

New Books, etc., Received.

- The Theory and Practice of Counter-Irritation. By H. CAMERON GILLIES, M.D. London: Macmillan and Co. 1895.
 Edinburgh Hospital Reports, Vol. iii. Edinburgh and London: Young J. Pentland. 1895.
 Eyesight and School-life. By SIMEON SNELL, F.R.C.S. Ed., Ophthalmic Surgeon to the Sheffield General Infirmary. Illustrated. Bristol: John Wright and Co. 1895.
 The Animal Tuberculoses and their Relation to Human Tuberculosis. By ED. NOCARD, Professor at the Alfort Veterinary College. Translated by H. Surfield, M.D. London: Baillière, Tindall, and Cox. 1895.
 London Temperance Hospital Report upon the Surgical and Ophthalmic Cases admitted during the year 1894. By LEONARD WILDE, M.D., M.R.C.P., D.P.H.
 The Sixty-eighth Annual Report of James Murray's Royal Asylum, Perth. 1895.
 Diseases of the Joints and Spine. By HOWARD MARSH, F.R.C.S., Surgeon to and Lecturer on Surgery at St. Bartholomew's Hospital. New edition. Illustrated. London: Cassell and Co. 1895.

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THE
BIRMINGHAM MEDICAL REVIEW.
NOVEMBER, 1895.

ORIGINAL COMMUNICATIONS.

ON THE VALUE OF
COLD WATER ENEMATA IN THE URÆMIC STATE.*

BY ARTHUR FOXWELL, M.A., M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE QUEEN'S HOSPITAL, BIRMINGHAM.

THE object of this paper is to bring before your notice the desirability or non-desirability of diluting the blood in uræmia.

Regarding the nature of this morbid state I will merely say that I think it due to one or both of these two causes—viz, (1) waste products abnormally retained in the blood; (2) excessive peripheral contraction producing stasis of the blood in the brain. As yet we have no means of separating the action of these two malignant forces; they are so intimately intermingled.

I have no doubt at all that the retention of the waste products of nutrition in the blood is quite sufficient to set up uræmia. Uræmia is but the accentuation of the chronic condition of many diseased states, not only renal, but of all those involving evil metabolism. It may therefore either arise from the production of abnormal waste products or from the undue retention of normal ones.

Renal incompetency is not necessary for the production of the uræmic state. In 1891 I saw a patient dying in what

* A Paper read before the Birmingham Branch of the British Medical Association. 1890.

seemed to be a typically comatose uræmic condition, but the urine had always contained much urea with no casts, a good specific gravity, and only a faint haze of albumen. Even on the day of his death the urea was estimated as 3·2 per cent. The *post mortem* examination revealed one kidney fairly healthy, one cystic; some pachymeningitis, and pyloric carcinoma. Here the kidneys had been equal to their work till the other lesions had so disturbed assimilation as to upset the balance which they had been able previously to maintain.

The depressed patient who comes to you with his sad tale of occasional momentary obliviousness to his surroundings, of loss of his retentive power (no mere self-forgetfulness), of a frequent weary headache, of insomnia with unhappy startings from his restless sleep, of intense and overmastering drowsiness occurring after food, and of that alarming and persistently recurring twitching in varying regions of the body which one may almost speak of as tiny convulsions—this melancholy man with his 'moody outbursts of gloomy anger—are not all his symptoms due to a poisonous state of his blood, with its resulting high tension and imperfect circulation? This, in these days of ptomaine and leucomaine pathology, is generally admitted now. But surely these symptoms are identical with those of uræmia—the drowsiness, the twitching, the insomnia, headache, and momentary unconsciousness.

It is true that the injection of apparently identical waste products into the blood has failed to induce uræmia; but, as Dr. Dickenson points out, these experiments have been conducted on animals with healthy organs, which probably disposed of the poisons too speedily for any serious effect to have resulted. In the same way our melancholy hepatic patient does not attain the full uræmic state because his excretory organs relieve him of his self-created poison, helped, perhaps, by a timely purge, by abstinence from food, or by the drinking of much water at a spa.

Dr. Broadbent, in his most excellent work on the Pulse, expresses the belief that unilateral paralyses and such local

paralyses as aphasia or hemiopia are far better explained as resulting from blood stasis or ischæmia from extreme peripheral contraction of the arterioles than from a poisonous state of the blood itself. This may well be so, but what cause for this peripheral contraction can there be except the bad state of the blood? Hence this latter must still be the penultimate if it be not the ultimate cause of these paralyses.

To explain the one-sidedness of the paralysis Dr. Broadbent suggests that some mechanical impediment may make the stasis more marked on one side than another: this may sometimes exist, but it seems to me as easy to understand that the irritability of the cells in varying regions may differ, and this would also help us to understand why the convulsions should be left-sided in one attack and right-sided in a succeeding one.

Holding this view of the condition I was induced to try the effect of the simple dilution of the blood by a bland fluid, so that the concentration of the poison might be lessened with a consequent lessening of the peripheral contraction. As a result the brain would be more fully supplied with blood, and this would be of better quality, so that the cerebral symptoms would cease. And again, the dilatation of the kidney arterioles would allow a greater flow of blood through them with a consequent increased excretion of morbid matter.*

My first case is that of a schoolmaster, who consulted me on July 11th, 1888. He gave me this history:—Fourteen years previously (when he was 12) several members of his family had scarlet fever, but, though he had a bad sore throat, he was not supposed to have had the disease. One brother died from subsequent renal mischief, and another has never been well since, and is said to have renal disease.† His legs were always

* Bleeding dilutes the blood; but not with a bland fluid, for the diluting lymph or serum which, after bleeding, is rapidly taken up by the blood-vessels from the tissues must, whether these be dropsical or no, contain some of the uræmic poisons. Yet bleeding is recognised as often being beneficial in uræmia; far more so, then, should dilution with pure water, or still better, normal saline solution.

† He is now, and has been for the last five years, under my care with undoubted nephritis.

much stouter than other people's, but this he put down to a peculiar formation of his calves. His breath had been short for two or three years, and this shortness he especially noticed when going up Cader Idris the previous autumn. Still he felt very well till February, 1888, when, after inhaling strong fumes of perchloride of mercury in his laboratory, he vomited several times, and noticed at night that his legs were swollen. The next day Dr. Scurrah saw him, told him he had serious disease of his kidneys, but was unable to get him to do more than partially rest for three weeks, after which he resumed work till the end of May. He then went for change of air, remaining away till he saw me.

He was a well-built man of 26, married one year. His pulse was 80, small, rather hard, but not sustained; artery slightly thickened. The heart's apex was in the fifth space and nipple line; the absolute dulness reached half an inch beyond the right edge of the sternum; the first apical sound was long and uneven, the second aortic accented; a faint systolic murmur was heard over the lower part of the sternum. There was some œdema at the base of the left lung. No ascites nor increase in size of the liver. There was much brawny œdema of the legs. A sample of twenty-four hours' urine had sp. gr. 1015, urea 1.5 per cent.; on boiling, nearly solid, from albumen; much uric acid; no blood nor sugar; many casts, chiefly those containing fat globules and degenerated epithelium, but also some granular ones.

I concluded he was suffering from an advanced condition of large white kidney, and that his heart was beginning to fail him. I accordingly strongly urged him to follow out a definite plan of treatment, which I laid down, under Dr. Scurrah's care. But this I could not get him to do, he evidently thinking I made much of his complaint.

A fortnight later, July 23rd, I saw him with Dr. Scurrah. He had complained of headache with frequent vomiting for a week, and on the evening of the 22nd these became much worse, convulsions setting in about midnight. When we saw him at

11 a.m. on the 23rd he was semi-comatose and had a severe convulsion every hour, biting his tongue badly. Dr. Scurrah had previously given him five grains of calomel and a turpentine enema. He was now ordered one-tenth of a grain of pilocarpin sub-cut and a half-pint injection of iced water per rectum every hour. At 4 p.m. he was in much the same condition; he had perspired somewhat, had passed a large scybalous stool and, during the last twenty-four hours, one pint of urine. At 10 p.m. he was slightly more conscious; temperature 100·2; no convulsions since 3·30; half the enemata had been retained; and he could be got to take teaspoonfuls of milk by the mouth. The pilocarpin was repeated and the injections continued.

At 4 a.m. on the 24th he had so far recovered as to refuse to have any more enemata; and when I saw him later he was taking milk and water freely. His pulse was 110 and temperature 100°. He had retained the later enemata well, and had probably absorbed five to six pints in all. The œdema of his face, which had been extreme, was considerably lessened, but his sight, previously fair, had almost quite gone; and Mr. Priestley Smith, who saw him a little later, found numerous severe hæmorrhages. On the evening of the 24th he was still improving, with no vomiting nor headache; his bowels had been moved thrice, and in the last twenty-four hours he had passed a pint of urine loaded with uric acid. He was given Tr. Convallariæ $\mathfrak{m}$ 5 and Citrate of Caffein gr. $\frac{1}{2}$ every four hours, and ordered two pints of skim milk and four of water in the twenty-four hours.

On the 25th he was, as his wife said, "quite a skeleton;" since she had known him he had never been anything like so thin, and his legs especially, she regarded with astonishment. Certainly, the rapid vanishing of the anasarca was remarkable. I have never seen anything approaching to it before or since. His pulse was 98, strong, full, incompressible. Temperature 99·8°. He had passed five pints of urine and had had seven motions. He was now given two pints of Vichy water and two pints of ordinary milk in the twenty-four hours.

During the next three days the urine lessened to three pints daily, and became at first hæmoglobinuric, and later hæmaturic in character; it was crowded with renal (fatty) epithelium and had a good many casts with some uric acid. The temperature and pulse remained about the same (100 each); the skin was moist, and the patient was extremely cheerful, his eyesight having improved sufficiently to distinguish fingers.

From this time onward his urine remained much as when I first saw him. His pulse became soft and quiet (82); the skin kept moist. He regularly imbibed six pints of fluid per diem, and his renal excretion varied from three to four pints. His œdema was less than he had ever known it; in fact the smallness of his legs was quite a revelation to both husband and wife.

Two months later ascites commenced, the anasarca still being very slight, but so late as Christmas he described himself as feeling much better than he did even before he inhaled the perchloride of mercury. Then, however, he gradually got worse; the anasarca and ascites rapidly increased (he was tapped twice); and his urine was once more loaded with epithelial, blood, granular and fatty casts. He slowly sank and died on March 24th, just eight months after the uræmic attack. There was no *post mortem*.

The other case is that of a man who came under my care in August, 1889, when I was taking charge of Dr. Saundby's beds at the General Hospital. He was a coal wheeler, 39, always a heavy drinker and much exposed to wet and cold. He had had no previous illness. In February, 1889, he first noticed swelling of his legs, genitals, abdomen, and face. For this he was admitted to Hospital. His urine was 1016, small in amount, and had a cloud of albumen with some blood. There was some œdema of the lungs and the liver measured $4\frac{1}{4}$ inches in the right nipple line. During his stay in Hospital the œdema vanished, but the urine remained unchanged and he suffered from severe headaches. He went out at his own request, and was re-admitted under me on August 19th. I found him with slight œdema, chiefly of the face. His liver measured $4\frac{1}{2}$ inches.

His heart's apex was beating in L. n. 1., the second aortic sound was much accented, and the pulse was 78, full, regular, firm, and incompressible. Urine 1020, 16 ounces in 24 hours, urea 1·3 p. c., much lithatic deposit, a dense cloud of albumen, a little blood, a few cellular, hyaline, and granular casts, granular and fatty renal epithelium. The amount increased to 40 ounces on the 24th, but sank to 24 on the 29th. He was given milk as a diet; tartrate of potash as a drink; and for medicine a grain each of digitalis, squills, and caffeine thrice daily. He also had a hot air bath every night.

At 10.30 p.m. on August 28th he had a convulsion, and then sweated profusely after pilocarpin, grain $\frac{1}{8}$ th, sub-cut. He had a quiet night but did not sleep. During the 29th he had eleven more convulsions, in the last of which he died; though there was such great sweating after the first yet the œdema rapidly increased. I saw him after the second and ordered rectal injections of water, a pint every hour. He retained ten out of the twelve given, but they certainly had not the slightest beneficial effect, and I think probably hastened the end, as the increase of the œdema was so extremely rapid.

Dr. Crooke made the *post mortem* examination and gave me the following report:—

Heart, 17 ounces. Wall of left ventricle seven-tenths of an inch thick, the muscle appearing to be healthy. The aortic and mitral valves were uniformly but slightly thickened. The aorta and coronaries were healthy.

Kidneys, 17½ ounces. Typical large white ones; capsules stripping easily and leaving a smooth creamy surface. The inter-pyramidal portions of the cortex were much thickened and broadened, whilst the breadth of the cortex over the pyramids seemed to be sometimes lessened, sometimes normal, and sometimes increased. The cortex had a semi-translucent, pale, fleshy look, and was much swollen; its veins were engorged as were also those of the medullary cones. The consistence of the organs was moderately soft and there was no amyloid reaction. Microscopically a diffuse nephritis existed; great parenchy-

matous changes with considerable increase of the intertubular stroma and extensive glomerulitis. Owing to some mischance there was unfortunately no examination of the liver.

Two difficult questions remain to be answered. In the first place, was the schoolmaster's recovery due to the injections of water? Both Dr. Scurrah and myself were firmly convinced that it was a case of *propter hoc*; but I am fully aware that it is almost impossible for me so to relate the case as to impress upon others the same conviction. I would urge that—1. The uræmic attack was a most severe one; it lasted twenty-eight hours with both coma and convulsions. 2. The only other treatment was five grains of calomel given at the onset with one-tenth of a grain of pilocarpin sub-cute. 3. Extreme diuresis and copious watery evacuations immediately followed the injections. 4. There was a large increase in the quantity of casts and epithelium—the result of washing the kidneys. 5. The mental restoration was speedy and perfect; the patient stating he never felt better than he did the day after the attack. 6. The rapid vanishing of the œdema; so different from its increase in the other case. All these I think point to the working of some active remedial agency, and the only one used was the water enemata.

But a far more difficult question is this next:—If this treatment was so efficacious in the one case, why did it fail and prove, in fact, even deleterious in the other? The urine was practically identical in both instances; we may roughly conclude therefore, both from this fact and the history of each, that the kidneys also were equally diseased. This is also evidenced by the condition of the heart, which in both gave equal proof of having been affected by the renal lesion. But if we look away from the kidneys, the clinical similitude ceases. The patient who recovered was only two-thirds the age of him who died; his tissues then would be correspondingly less worn, and have a correspondingly greater power of recuperation. He, too, had undergone no previous treatment, whereas much had been already effected in the other during his ten days' rest in

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N.B.—The above are approximate proportions, and it may be necessary to vary the strength sometimes according to circumstances.

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hospital on a drink of tartrate of potash, with milk as diet, and digitalis, squills, and caffeine as adjuvant-drugs ; indeed, it must be noted, that there was a distinct improvement in the first few days. More importantly, while the younger man was abstemious and well-balanced, he who died had for long drunk heavily. Clinical evidence of the ill-effect of this existed in the hard large liver ; and there is every reason to suppose that other metabolic and hæmopoietic organs had also suffered. Herein lies the key of the position : in so far as the excretion of the normal products of metabolism, they both were equal ; but the one who died metabolised badly, and produced *excessive* waste products. Moreover, he was a poor blood-maker. Chronic renal disease itself tends to impoverish the blood ; the red corpuscles, *e.g.*, may fall as low as 50 per cent., and if he could but feebly make these, it is evident his blood must have been in a most precarious state. Now if the blood be too greatly diluted, convulsions will follow, even in a healthy animal, and clinically we recognise the condition of anæmic convulsions. Thus the dilution in the fatal case may have even increased the "uræmia" by too greatly diluting the blood in a patient who could but very feebly recuperate it. Finally, the excess of fluid thrown into the circulation (for it was absorbed from the bowel) increased the labour of the heart ; thus the heart, fed on such wretched blood, could not cope with it, failed, and its failure increased the dropsy.

Thus the treatment which succeeded in the one, failed in the other case because the two were not of the same nature ; indeed they form only another example of the absolute truth of the axiom which is ever to be remembered by us all :—We must treat the patient as a whole, and not merely the disease from which we discover him to be suffering.

HEREDITARY CEREBELLAR ATAXY.

BY DOUGLAS STANLEY, M.D.

PATHOLOGIST TO THE GENERAL HOSPITAL, BIRMINGHAM.

SINCE Friedreich described the interesting disease which has been named Hereditary Ataxy, many cases have been recorded showing more or less marked inco-ordination, and this, with other symptoms, occurring in several members and in more than one generation of the same family. Such cases have, up to the present, been looked upon as "Friedreich's Disease," and as forming a fairly well marked clinical entity. But more extensive observations have revealed decided and important variations in cases of hereditary ataxy, the more so as the increasing number of these observations gives more scope for comparisons. As so frequently happens in the descriptions of a disease, especially in neurology, atypical symptoms were here looked upon as mere variation from type until it was found that the chief diagnostic features in several cases were so opposed to type that it now becomes necessary for us to review our position towards "Hereditary Ataxy."

From a study, therefore, of what were considered aberrant cases of Friedreich's Disease, P. Marie (1 and 2) came to the conclusion that while the term hereditary ataxy was quite correct in a certain sense, it was really taking as the name of a disease a symptom which might be common to two or more conditions. He therefore proposed separating some of these so-called irregular cases, on clinical grounds, from true or typical cases of Friedreich's Disease, for reasons to be shown presently, suggesting for them the term "Hereditary Cerebellar Ataxy" (*Hérédo-Ataxie Cérébelleuse*)."

For sake of comparison, it may be convenient to review briefly the points which, according to Ladame (3 vol. xii.), go to form a typical case of Friedreich's Disease. This author, in his very clear account of the disease, shows that, while cases vary within certain limits in the more or less prominence of certain

symptoms, the following make up an average clinical picture :—
“Slow and progressive ataxy of the four limbs, usually attacking several children of the same family, dating very often from very early age, commencing in the legs, extending gradually to the trunk and arms, the muscles of the larynx, those of the tongue and eyes, weakness of the legs, increasingly difficult gait, choreiform unsteadiness ; static ataxy ; difficulty of articulation ; nystagmus ; spinal curvature ; paralytic club-foot ; abolition of knee reflexes ; no sensory disturbances ; absence of oculo-pupillary anomalies and of lightning pains ; integrity of sphincters.” From his researches, Ladame considers that there are no authentic cases in which Friedreich’s Disease has appeared after the age of 20. He also emphasises the fact that the special senses are not affected.

Taking this as a list of the symptoms and signs of a case of Friedreich’s Disease, we find several cases recorded in recent medical literature wherein many of the above are absent, while some of a different character are present. These cases have been described by Fraser (4), Nonne (5), Sanger Brown (3, vol. xv.), Klippel and Durante (6), Brissaud (7), and finally by Paul Londe in a short monograph (8).

From these and original observations, Marie believes that there is much evidence in favour of looking upon Hereditary Cerebellar Ataxy as a distinct disease.

The following is a description in some detail of these cases, which we may compare with what has been said above of Friedreich’s Disease.

The condition is a “family” one, and even more markedly hereditary than Friedreich’s Disease (accepting, for purposes of description and comparison that there are two diseases), as more generations seem to be attacked than in the latter, where the distribution may be only a family one. As the disease descends through several generations, it seems to intensify, the children being more affected than the parent. While there appears to be little difference in the sex proclivity, the female side transmits four times more frequently than the male. The

age of onset is somewhat variable, but the average is 16 to 35 (Sanger Brown), the extremes being 12 and 45.

Most usually the first symptom is unsteadiness of gait, beginning in the legs and spreading to the other limbs as a pronounced ataxy. To this is added a marked cerebellar "reel" (whence the term "cerebellar ataxy"), so that the patient walks with a wide base and much staggering. On standing, he is also unsteady, but closure of the eyes does not seem to increase it, or only to a very slight degree—that is, Romberg's symptom is either absent or but little marked. Rarely inco-ordination begins in the upper limbs. As the case advances, choreiform movements of the head and face appear, which spread to the arms and legs. At first they are only brought out by voluntary movement, but later they may become almost constant except during sleep. The face sometimes shows very marked contortions, and static ptosis is described by Sanger Brown, to correct which the levatores may be made to over-act. Londe mentions that muscular contraction is prolonged, so that the patient may have some difficulty in relaxing his grip.

There is, generally speaking, no sensory derangement, the only thing noticed being vague pains in the limbs and loins. At the same time Klippel and Durante (6) mention loss of tactile sense in the legs and feet, some analgesia, etc. In most instances no defect of the muscle sense has been made out.

Speech is notably affected, being "jerky" and "explosive," or, as Sanger Brown says of one of his cases, "the voice has the same irregularity as the hand movements; it is not a tremor, but a shaking; she does not hesitate in her enunciation, but, so to say, shakes her words out with poor but not abolished labial and palatal action." The voice is also described as low pitched and monotonous (3 vol. xv., p. 259).

The various reflexes present important characters. The superficial are generally much increased; and this seems, from the records of some cases, to be one of the earliest signs. Of greater interest is the more or less increase of the knee jerks. In some few instances these are described as "normal," but in

general they are over-active, certainly never absent. Ankle clonus may or may not be present. The organic reflexes sometimes show derangement; thus the sphincters may be "defective" and weak, and there is a difficulty in swallowing fluids.

The ocular symptoms are many and important. There is from an early period a progressive contraction of the visual field with, in many cases, dyschromatopsia and amblyopia. This loss of visual acuity may proceed to complete blindness in one or both eyes; and on ophthalmoscopic examination, optic and retinal atrophy is found. The pupil reaction to light becomes sluggish, and, as the case becomes worse, there may be complete loss; accommodative reaction seems less affected. Diplopia is not infrequent. There is some difference of opinion on the question of nystagmus, some saying it is absent (Brown), others that it is present. Klippel and Durante (6, p. 755) describe irregular jerking movements of the eyeball rather than rhythmic oscillations, and they term this phenomenon "false nystagmus."

There is no club-foot nor spinal deformity such as are present in so many cases of Friedreich's Disease. Trophic changes are not found, unless we may so consider a tendency to general emaciation.

The cases progress from bad to worse till they become absolutely unable to feed themselves or move from their beds. Sanger Brown speaks of one patient as going about on her hands and knees for several years before she became quite helpless.

For a long period there may be no loss of mental power, and indeed in several cases this has been distinctly of a high order; but towards the end the faculties become dulled.

The etiology of these cases is as obscure as in the other instances of hereditary nerve disease. Tubercle, alcoholism and syphilis in the parents, exposure (Nonne), have all been suggested, but with what justification is at present impossible to say. It has been thought that the appearance of the disease often in adult life has an important bearing, for such patients would be more likely to have married before its onset, while in

Friedreich's Disease the early onset would debar marriage. The result would be a greater number of affected generations (*vide supra*).

It must be evident from what has been said that in this condition we have a disease showing distinct clinical features, which, taking them all together, seem to make up a well-defined group. That there is some resemblance to what we may look upon as Friedreich's Disease proper, one does not deny, such as the marked family proclivity, titubating gait, speech defects in some degree, and perhaps nystagmus. These points bear only an analogy at the best, for when subjected to critical examination, they are really found to differ considerably from what one finds in Friedreich's cases. When, however, we take into consideration the increased knee-jerks (or at least their presence), the marked eye symptoms—limitation of the fields, amblyopia, dyschromatopsia, optic atrophy, loss of light-reaction, — the absence of deformities, and lastly the marked difference in the age of onset, all of which are in strong contrast with "Friedreich's Disease," we have a series of phenomena which, by any argument, would be difficult to bring into line with Friedreich's Disease, and which probably justify us in separating the two and in admitting the existence of Hereditary Cerebellar Ataxy as a disease in itself—related, it may be, to Friedreich's Disease (Hereditary Spinal Ataxy ?), but not merely an atypical form of the latter. The differences seem to be too decided and too constant to warrant such a view.*

Does morbid anatomy throw any light on the subject? Although many cases of hereditary ataxy have now been examined *post mortem* they appear to have been mostly typical Friedreich's Disease, while a very limited number of the other form have been described (Nonne, Fraser). Briefly, the lesions found in the former are sclerosis of the columns of Goll and

* We have at least one instance where, on less evidence, one may say the existence of two separate diseases is strongly maintained by some neurologists—*e.g.*, Amyotrophic Lateral Sclerosis (Charcot's Disease) and Progressive Muscular Atrophy (Aran Duchenne)—although others look upon the two as the same disease with variation.

Burdach, the direct cerebellar and the crossed pyramidal tracts; atrophy of the posterior horns and of the cells of Clarke's column. In the few autopsies of the second form the lesions have been mainly *cerebellar*; thus in one of Fraser's cases (4, pp. 204-5) the grey substance of the cerebellum was much reduced in thickness, with "gaps" at different points on its surface as if fluid had collected beneath the membranes. The cells of Purkinje showed much atrophic alteration, having lost their usual shape, and in many no nucleus was visible. *The spinal cord showed no lesion.* In Nonne's case it was noticed that all parts of the cerebro-spinal system—cerebrum, cerebellum, pons medulla, and cord were abnormally small, as if they had undergone atrophy (the patient was aged 40), and as there were no appearances of any inflammatory condition, this atrophy would seem to have been a primary condition. The reduction in size of the cerebellum appears to have been very marked. The spinal cord did not show any degenerations, but it was remarked that, compared with the large fibres the small were very numerous, probably through atrophy or non-development of the former. On the other hand, Menzel found in addition to very marked atrophy of the cerebellum, pons, and olivary bodies, diminution of the cerebellar cortex and deficiency of Purkinje's cells, in the lobes, but not in the vermis, and the cord also small, showed degeneration of the posterior columns, the crossed tracts, and the direct cerebellar tracts. That these observations, though few, are of great interest and importance we must admit, for they indicate, if nothing more, the lines for future observations.

In connection with these facts it is curious to hear of cases of cerebellar disease occurring in two kittens born with two others in one litter. The cases are recorded by Drs. Herringham and Andrews (9). The animals were quite ataxic, walked with a wide base, and the "whole hind quarters swayed and tottered from side to side, and often fell over, thus dragging the fore part with them and making locomotion very difficult and uncertain" (p. 242). On *post mortem* examination the cerebella were

abnormally small (comparison was made with healthy animals of about the same age) especially the middle lobe; the central white matter did not seem smaller than natural in its relative proportion to the whole cerebellum. On microscopic examination it was found that the molecular layer was scarcely half its normal width, but preserved its ordinary ratio to the size of the diminished cerebellum. Purkinje's cells, though "not appreciably diminished in number" were very irregularly arranged, and their processes could not be traced out in the usual way. In the granular layer there was much narrowing so that in some places this was "hardly recognisable as a distinct layer," and the "hæmatoxylin" cells were distinctly deficient in number. In these two cats no changes could be found in the pons, medulla or cord.

Here, therefore, we have a "family" ataxy and cerebellar symptoms and cerebellar lesions—Hereditary Cerebellar Ataxy. Is this in any way related to the disease as it occurs in the human subject? The answer is not as yet forthcoming, for until more cases have been observed and followed out, it would be unsafe to come to a conclusion. At the same time we must admit their importance, for they indicate that definite cortical lesions with general atrophy of the cerebellum may occur in related subjects, producing cerebellar symptoms and without cord lesions. They also, taken with Fraser's and Nonne's human cases, lend much support to Marie's theory that while in Friedreich's Disease we have a cord lesion, whatever changes there may be higher up being secondary, in Heredo-Cerebellar Ataxy the lesion is primarily cerebellar, and that changes, if they exist, in the cord are secondary. But even if we dispute the question of morbid anatomy as yet, we have still the clinical features which go far to justify us in believing that these are two distinct diseases.

These cases are, it is needless to say, uncommon. Perhaps they may in future be more frequently seen as attention becomes directed to the existence of this type. It is not improbable that some cases of supposed disseminated sclerosis

may be of this nature; I had myself some years ago a case which I then took to be insular sclerosis of an unusually irregular kind. There was a peculiar family history (which unfortunately there was no means of verifying), cerebellar gait, exaggerated knee-jerks, and practically all the ocular defects described above. It is possible it may have been a case of the kind under consideration.

LITERATURE.

- (1) *Semaine Médicale.* 1893.
- (2) *Traité de Médecine.* Charcot, Bouchard, et Brissaud. Vol. vi. 1894.
- (3) Brain.
- (4) *Glasgow Med. Journ.* 1880.
- (5) *Arch. für Psychiatrie.* 1891.
- (6) *Revue de Médecine.* 1892.
- (7) *Leçons sur les Maladies Nerveuses.* Brissaud. 1895.
- (8) *Héréd-Ataxie Cérébelleuse.* Londe. 1895.
- (9) *Bart. Hosp. Reports.* Vol. xxiv.

ON GONORRHŒA IN PREGNANCY.

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SOME two years ago I had under my care two cases in which Gonorrhœa was contracted in the early months of Pregnancy, and, as I have had these cases under almost continuous observation since then, I have thought that the particulars of each with some remarks on the subject may prove interesting.

The first case was that of a young married lady who had one child six months previously, which she had suckled. For some three weeks she had been suffering from vaginal discharge with swelling and much pain in the privates, and smarting on micturition, but these symptoms had to a large extent subsided when she came to me in August, 1893.

I found on examination that she had a thick purulent discharge from the vagina and an abscess in the left labium; the latter I opened and it quickly healed. She had some pain in the abdomen a week afterwards, and on making a bimanual examination I found that the uterus was enlarged, and diagnosed that she was about three months pregnant. On my telling her this she was somewhat astonished, but fourteen days later sent for me and I found that she had miscarried; she was bleeding profusely, and I had to remove part of the placenta from the uterus; the bleeding then stopped.

After this she had very severe attacks of abdominal pain, with at first a slight rise of temperature. These pains continued severe for about a month, during which time she remained in bed, and they then began to moderate, and in a few weeks more had entirely disappeared.

After the removal of the placenta I douched out her uterus with Perchloride of Mercury solution, 1 in 3000, and during the whole of the time she was in bed she had a daily vaginal douche of the same, followed by one of plain water. The pain was treated by opiates. The vaginal discharge continued, but became less profuse. When her next period came on there was a return of the pain, and the menstrual loss was very profuse.

The same thing occurred at each succeeding period for at least twelve months, and on each occasion she remained in bed as long as the flow lasted, from eight to ten days. The intervals between the periods were from fourteen to twenty-one days. After this time the menorrhagia and dysmenorrhœa gradually abated, and for the past six months the periods have been normal in time and quantity, and have not been attended by pain, and she expresses herself as feeling perfectly well.

I examined her carefully bimanually a short time ago and could detect nothing abnormal in either uterus or appendages.

The second case, also a young woman, the mother of two children, came to me with symptoms of acute gonorrhœa when four weeks pregnant. Under treatment the symptoms subsided,

but were followed by some sharp shooting pains in the abdomen, the latter however disappearing in the course of a fortnight.

Pregnancy went on to term, and the child was born in October, 1894. The labour was very lingering from simple uterine inertia, but presented no other point of notice. In spite of care the child developed a very severe purulent ophthalmia, and was under the care of an ophthalmic surgeon for several weeks.

The patient made a good recovery from her confinement and very shortly became pregnant again; she then aborted at the fourth month, losing considerably afterwards. She quickly became pregnant, and again aborted at about the third month. This time there was difficulty in removing the placenta. After this abortion she went on losing for a fortnight, so that I decided on curetting the uterus; this I did under an anæsthetic, after dilating the cervix with Hegar's dilators.

Since the curetting (three months ago) she has had no pain. Her periods have been normal, and she has expressed herself as feeling quite well.

While under the anæsthetic, I made a careful bimanual examination of the pelvis, and could detect no disease of the appendages.

In each of these cases the diagnosis of gonorrhœa was confirmed by the statement—volunteered by the wife in the one, and elicited from himself in the other—that the husband was under medical treatment for urethral discharge, etc., at the same time.

It has seemed to me that the presence of the fœtus in the uterus has prevented the infection passing along to the tubes and peritoneum while in its most acute and virulent form, and so these structures have, as far as one can judge, escaped permanent injury. The disease undoubtedly affected the cervix during the pregnancy, and, after evacuation of the uterus, probably extended to the endometrium, causing the menorrhagia.

The diagnosis of gonorrhœa in pregnancy, in its acute form, is attended by the same difficulties as in the non-pregnant state.

I am accustomed to look upon the following signs, when

there is a vaginal discharge present, as pointing to the condition being due to gonorrhœal infection :—Implication of the urethra, attended by smarting and pain on micturition, and evidenced by the presence of pus in the urethra ; the pus can be squeezed out by drawing the finger along the urethra so as to press it against the pubes. Associated with this I have several times noticed an œdematous condition of the orifice of the urethra and of the mucous membrane immediately around it, so that the swollen parts sometimes form quite a distinct small tumour.

Other signs are :—Œdema and inflammation of the labia and the formation of a labial abscess in connection with the gland or duct of Bartholin. The orifice of the latter may be sometimes seen to be inflamed, and exuding pus on pressure even when there is no labial abscess. This inflamed condition of the orifice of the duct of Bartholin I have found to persist after all the other signs mentioned have subsided.

It should not be forgotten that no one of these signs is absolutely diagnostic of gonorrhœa ; and the presence of the gonococcus in the discharge should not have too much value attached to it, unless determined by a skilled bacteriologist, as various diplococci resemble the gonococcus.

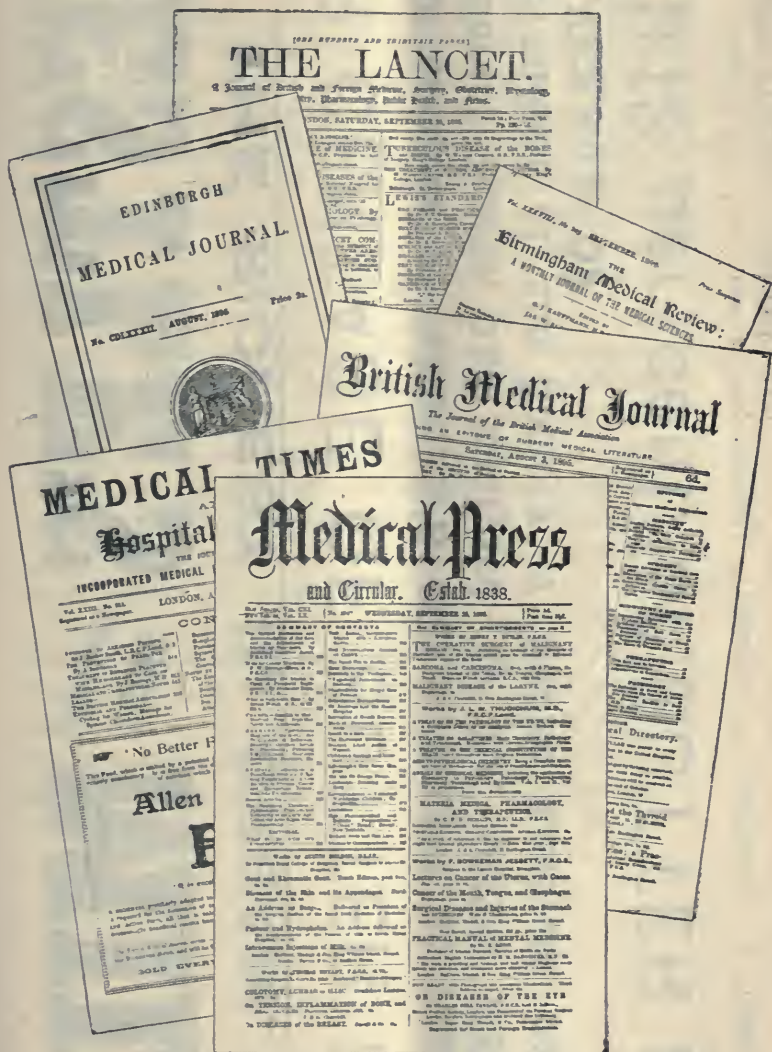
As to the treatment, little can be done in the first few days of the acute stage beyond the administration of alkalies and demulcent drinks and bathing the vulva with a mild antiseptic lotion, as a solution of boric acid. When the most acute symptoms have passed off, one would not advise radical disinfection of the vagina with the patient under an anæsthetic, as may be done with good effect if the patient is not pregnant. Good may be done by using weak injections of perchloride of mercury (1-4,000 or 5,000) ; but it should be borne in mind that there is much more risk of absorption and of mercurial poisoning in the pregnant woman, and if this solution is used, care should be taken that it gets away and that none remains in the vagina, or the perchloride douche may be followed by one of plain water.

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prevent extension of the infection, as it is quite possible for a purulent peritonitis to be set up then by gonorrhœal infection which, up to that time, had been limited to the cervix. After labour the uterus should be washed out by the medical man himself with a solution of perchloride (1 in 3,000). I have done this frequently after intra-uterine operations which have involved the introduction of the hand into the uterus, and have never seen any symptoms of mercurial poisoning follow, though I believe poisoning may occur if routine vaginal douching in the puerperium is practised.

I believe that puerperal peritonitis caused by gonorrhœa more frequently results when there is tubal disease already existing, the result of an infection acquired previous to impregnation; and the most severe case of puerperal peritonitis I ever had, and one which narrowly escaped ending fatally, occurred in a young woman, an actress, who had suffered from pelvic inflammation the result of gonorrhœa some two years previously.

In addition to the above precautions, especial care should be taken in attending to the eyes of the child.

I am afraid that, in spite of all that has been written of late years, the seriousness of gonorrhœa in the female is still insufficiently recognised. It is now incontestably proved that this disease is the cause of a very large percentage of the lesions of the uterus and appendages which come under our care, and which are unfortunately, in their later stages, extremely intractable to treatment.

ON AFFECTIONS OF THE RETINA AND OPTIC
NERVE, OCCURRING IN GENERAL ANÆMIA;
WITH REPORT OF TWO CASES OF OPTIC NEURITIS.

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It is well known that anæmia may be the cause of neuro-retinitis or of retinal hæmorrhages, or of both combined. The researches of Dr. Stephen Mackenzie (*Trans. Oph. Soc.*, 1884) have shown that the tendency to hæmorrhages is closely related to the depravity of blood corpuscles, and that they are likely to occur when this depravity falls below 50 per cent. On the other hand, Dr. Gowers regards retinal hæmorrhages as rare in simple anæmia of young women, and says (*Medical Ophthalmoscopy*, p. 243):—"Hæmorrhages are said to occur, but are certainly very rare in simple anæmia, and probably only take place where there is a great absolute deficiency in the number of red corpuscles. I have however found them absent in a case in which the corpuscles were only 26 per cent. of the normal;" and suggests that when the depravity of the hæmoglobin rather than of corpuscles is the marked feature of the anæmia the tendency is to Retinitis, and in his *Medical Ophthalmoscopy* relates two cases in which this point was investigated, and says: "In each case the anæmia was very great, the hæmoglobin being reduced out of proportion to the corpuscles, in one to 30 per cent., in the other to 38 per cent." These facts tend to explain how it is that in simple anæmia of young women it is retinitis which is most commonly met with, whereas in acute anæmia, the result of loss of blood, and in pernicious anæmia, retinal hæmorrhages are more often present.

In my own and Dr. Saundby's investigations some years ago, into the prevalence of retinal changes in the simple anæmia of young women, in which 50 cases selected by Dr. Saundby were

carefully examined ophthalmoscopically by me (*Oph. Review*, 1882, p. 305) five cases, that is 10 per cent., showed evidence of some affection of the retina, in one only of these cases were slight hæmorrhages a feature.

Looking back over the 13 years' experience of these affections since that time, I feel that 10 per cent. probably fairly represents the tendency to retinal affections in the simple anæmia of young women.

I have in several instances in which young women have consulted me for refractive troubles, who had suffered perhaps years previously from anæmia, found evidence of previous neuro-retinitis, though at the time it caused so little visual disturbance as to have escaped the notice of the patient.

I have noted marked pallor and opaqueness of the optic disc from increase of connective tissue, the result of previous neuro-retinitis, though vision both for form and colour was perfect and the F. V. normal, an appearance which to the uninitiated might be wrongly assumed to be a state of progressive atrophy of the nerve—interesting evidence that the function of the nerve may be perfectly performed though its structure is impaired. In a few similar cases I have found a portion of the F. V. lost, and on ophthalmoscopic examination have found a branch of the retinal artery, corresponding to the lost part of the F. V., reduced to a thread, no doubt from previous thrombosis of this branch of the retinal artery, which occurred during the attack of neuro-retinitis.

The fact that optic neuritis, without retinitis, closely resembling that seen in intracranial disease may be caused by anæmia is not perhaps as generally recognised, though Dr. Gowers states that "optic neuritis occasionally occurs in chlorotic girls." The two following cases therefore of this condition seem worthy of record, and show how well such cases progress under proper treatment, in the absence of which it is fair to presume that probably serious permanent damage to vision would occur.

C. C., æt. 14 years, came under my care at the Eye Hospital on July 25th, 1891, when I obtained the following history:—

That she had been ailing for two months, that she had never menstruated, was usually constipated, and that on July 12th she had an attack of vomiting which lasted an hour, and had since been suffering from loss of appetite, giddiness, sleeplessness, humming noise in the head and weakness, and had attended the General Dispensary, where she was treated for anæmia with an iron mixture; that on July 17th she began to suffer from severe pain over the left eyebrow, and on July 19th noticed that the sight of the left eye began to fail, and rapidly got worse; that on July 21st the left eye was quite blind, and the right began to grow dim, and on July 23rd she was quite blind in both eyes, and came to the Eye Hospital on the advice of the Dispensary doctor.

On examination, she was markedly anæmic. Both pupils were widely dilated and did not contract to light; she was almost completely blind, only having the faintest and doubtful power of perceiving light with either eye.

On ophthalmoscopic examination, I found intense double optic neuritis, with great swelling, and œdema of the disc, but little or no coarse exudation of lymph. The vessels, especially the veins, were very engorged and tortuous. There were no hæmorrhages or exudation in the retina.

I at once admitted her as an in-patient, and ordered her to be kept in bed and to have a purge (?), calomel and jalap, and prescribed a mixture containing arsenic and Blaud's pill (gr. v.), two 3 times a day, to be increased to three next day, and put her on a diet of raw meat, well chopped up and beaten in a mortar and mixed with gravy and potatoes, for dinner, and the same in form of sandwich for supper, and ordered her claret to drink with her dinner, and for the rest chiefly a milk diet, with beaten-up egg occasionally, and tea and bread and butter if wished for. I also ordered a daily morning purgative of equal parts of mag. sulph., sodæ sulph., and sodæ bicarb. in water. Under this treatment she soon began to feel better; the purring noise in the head and headache got better, and on July 31st she could see the light without doubt, but not objects. The

pupils were still widely dilated, and the appearance of the optic discs much the same.

August 2nd. Pupils less dilated, act slightly to light; vision improving.

August 4th. Pupils still less dilated V = fingers at 1 fr.

From this date the optic neuritis appeared to be subsiding rapidly, and patient regained vision, the anæmia got less, and she went on well except that on August 28th she had an epileptiform fit lasting twenty minutes; but she steadily improved after this fit.

September 7th. It was noted—Optic neuritis almost gone; anæmia scarcely perceptible; R.V. = $\frac{5}{40}$, L.V. $\frac{5}{5}$ c., + 50 cyl., axis ϕ 90°.

October 31. I noted—"Fundus looks normal except slight fulness of veins. V.R. = $\frac{5}{20}$, L. $\frac{5}{5}$. Colour vision good.

November 24th. Discs look normal, and previous neuritis had left no trace of its occurrence. V.R. = $\frac{5}{8}$ c. $\frac{-1}{+2}$ cyl. axis ϕ 90°, L.V. $\frac{5}{5}$ c. + 50 c. Colour vision perfect. Charts taken by perimeter showed full normal field of vision in each eye, and careful examination of R. cornea showed *slight* nebula here just outside edge of pupil, and evidently the cause of astigmatism, and reason of imperfect vision, when unaided, of this eye, which previously to this discovery was thought to be probably due to permanent damage to the optic nerve by the neuritis.

I had opportunities of examining this patient occasionally for some two years after this attack, and always found the eyes to be as when last noted, and learned that she had no recurrence of the fits or of pronounced anæmia and headache, or any reason to make one think she had coarse intra-cranial disease; that menstruation had become established, and her general health good.

It is difficult to say what connection there was, if any, between the epileptic attack and the optic neuritis. Possibly the fit was due to reflex causes connected with the first establishment of the menstrual function, and possibly this also had an influence in causing the neuritis, which has been seen at this

period without anæmia, though the presence of the anæmia was a sufficiently obvious cause of the neuritis, which improving as the anæmia got less, seemed to indicate that the anæmia, at any rate, was the chief cause in its production.

The rapid onset of the optic neuritis, and the rapid recovery under treatment in this case, is further support of the view that it was due to anæmia and not to any intra-cranial cause. I would say, as Dr. Gowers says in discussing a similar case (*Medical Ophthalmoscopy*, p. 244), "I have never known neuritis from cerebral disease to develop with the extreme rapidity exhibited by this case; and such intensity of progress, in conjunction with the entire absence of cerebral symptoms, excludes, I think, a cerebral cause."

Case 2. A. E., aged 23 years, came to the Eye Hospital first on December 17th, 1892, complaining of dimness of the right eye which came on a fortnight previously. On examination I found her distinctly anæmic, and ascertained that for six months the catamenia had been much reduced in quantity and colour, though regular, and that during this time she had felt weak, and suffered from headache, easily tired, and was breathless on the least exertion.

Ophthalmoscopic examination showed intense optic neuritis in the right eye, the edge of the disc being hidden by soft exudation and much swollen from œdema, while the vessels, specially the veins, were somewhat engorged and tortuous. The Vision, which was defective, was unfortunately not noted. Left optic disc was normal.

She was at once admitted as an In-patient, and ordered small doses of pot. iodid. (gr. v.) with liq. arsenicalis $\mathfrak{m}$ iij. t.d.s., and Blaud's pills, iij., t.d.s., and cascara sagrada given every night to keep the bowels open, with an occasional saline aperient in the morning if required; but on one or two occasions castor oil was required in addition to move the bowels. She was ordered diet similar to the first case, and claret to drink with her dinner. Under this treatment she rapidly improved in health, the anæmia got less, the headache ceased, and the optic neuritis subsided.

On January 4th it was noted that the disc was very much cleared, the swelling had subsided, and there was only slight haziness of the edges. R. V. = $\frac{6}{12}$. This improvement went on rapidly. February 25th it was noted R. V. $\frac{6}{6}$. Perimeter showed the F. V. to be normal; colour vision was good, and the right disc appeared normal.

She attended occasionally for some month or two, during which there was no recurrence of optic neuritis or other symptoms.

That the anæmia was the cause of neuritis in this case seems borne out by the fact that no other cause presented itself, either in the orbit or in her general symptoms; and moreover it completely subsided as the anæmia improved.

A SIMPLE MEANS OF OBTAINING MONOCHROMATIC LIGHT IN PHOTO-MICROGRAPHY.

BY T. LAW WEBB, M.R.C.S., ETC.

THOSE workers in the biological field who use the microscope not only as an instrument of research, but also utilise it to obtain a permanent record of their observations by means of the photographic plate, are often annoyed by a "fuzzy" appearance of the negative, as if the object were slightly out of focus; and this, too, when great care has been taken in illuminating and focussing. I do not mean to state that this is noticeable with low powers, but it becomes offensively evident in photographs taken with high powers. No doubt the trouble arises from the fact that microscope objectives are corrected so as to bring to an accurate focus only the rays from a certain part of the spectrum—say in the green or blue-green region.

As the focussing for photography is usually done for yellow rays (of lamp-light for the most part), it is easily seen that sharp images are impossible, unless some means can be devised for cutting off the red and ultra-violet rays, and at the same time focussing by monochromatic green light.

In an able paper by Mr. J. W. Gifford (which may be referred to in the April number of the Journal of the Royal Microscopical Society), a description is given of a colour-screen which transmits only ultra-violet rays. This screen, though most ingeniously arranged, and quite successful in stopping all rays except the "monochromatic violet," was not practically of much use, for the simple reason that no objective corrected for the violet rays could be anywhere obtained. However, this need not cause regret, for the author of the paper gives further on an account of a colour-screen made with methyl-green, by which excellent micro-photographs were taken. He recommends that a strong glycerine solution of the dye be enclosed between two thin cover-glasses separated by a metal ring. This would certainly be effective, though perhaps a little apt to leak, especially when long exposed to the heat of the lamp.

As I am accustomed to do most of my micro-photographic work with the microscope in the vertical position, it struck me that I could still further simplify Mr. Gifford's ingenious arrangement by making use of the achromatic substage condenser as a support for the methyl-green solution. I therefore place a drop of the glycerine solution on the plane surface of the upper lens of the condenser, and then gently lower a small and very thin cover-glass on to the drop, which thus becomes flattened out, forming an efficient colour screen. This answers admirably, allowing the most accurate focussing and giving delightfully sharp pictures. Although to the eye the light seems much subdued, yet it is remarkable how little the necessary exposure is lengthened. Those microscopists who will try this, will be grateful to Mr. Gifford for a most helpful suggestion, and I think will appreciate the modification described above, which does away with the necessity for any cell or tank to contain the coloured liquid.

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REPORTS OF CASES.

LARGE OVARIAN TUMOUR ASSOCIATED WITH PARAPLEGIA, PROBABLY OF REFLEX CHARACTER.

BY W. D'E. EMERY, B.SC., M.R.C.S., L.R.C.P.
HOUSE PHYSICIAN, QUEEN'S HOSPITAL, BIRMINGHAM.

The association of paralysis of the lower extremities with pelvic disease is well known, and is usually considered to be due to an ascending neuritis involving the lumbar and sacral plexuses of nerves only, or extending from them to the cord. In the case to be described, all the symptoms of a transverse myelitis accompanied a case of ovarian tumour, and disappeared so rapidly when this was removed as to throw strong doubts on the existence of any structural lesion in the nervous system.

E. S., aged 35, married, no children, was admitted to the Queen's Hospital, under Dr. Purslow, on January 3rd, with a tumour in the abdomen, paralysis of the legs and rectum, and overflow-incontinence of urine.

There was nothing of importance in the previous history, except that she had had rheumatic fever six years before. There was no valvular disease of the heart. She first noticed distension of the abdomen two years before admission. This was not associated with any pain, irregularity of menstruation, or dysmenorrhœa. A month before her admission she noticed heaviness and weakness of her legs, which lasted for about a week, when she rapidly, *i.e.*, within twenty-four hours, lost the use of them. A fortnight before her admission her urine began to trickle away.

On admission her state was very grave, expression anxious, pulse rapid, feeble, and irregular; her abdomen was greatly

distended, but otherwise she was emaciated. A catheter was passed, and 67 oz. of urine were drawn off. This was alkaline, sp. gr. 1.012, and contained much albumen and muco-pus. There was constant severe and distressing vomiting.

Nervous System.—The left leg was completely paralysed and rigid in the extended position; she had slight power of movement over the right leg, and it was not rigid. Sensation normal. Ankle clonus was present on each side and the knee-jerks greatly increased, forming a regular knee clonus lasting several seconds. Plantar reflexes exaggerated. The arms were normal. The detrusor urinæ and sphincter of the rectum were absolutely paralysed.

The abdomen was distended, and there were many dilated superficial veins. A dull, hard, non-fluctuating tumour extended from the hypogastric region to the costal arch, chiefly on the right side. Girth at umbilicus 34 in., distance from xiphoid to umbilicus $6\frac{3}{4}$ in., from thence to pubes 10 in. This tumour occupied almost the whole of the abdomen, leaving only a narrow resonant band on each side. Per vaginam nothing abnormal could be felt.

The patient's general condition was very unsuitable for the performance of a serious operation, but as there seemed to be no chance of its improving until the tumour was removed, Dr. Purslow performed ovariectomy on January 5th. The following are brief notes of the operation. Chloroform was badly taken and was soon changed to ether, which was well borne. About a pint of intensely offensive urine was drawn off by catheter. Incision about six inches long reaching up as far as umbilicus. The bladder—the double thickness of which was not more than one-eighth of an inch—was found to reach to the umbilicus, and was only avoided by very careful dissection. Its wall appeared to contain scarcely any muscular tissue, and was almost transparent. The cyst was found to be very tense, and on tapping it, about five quarts of thin pus-like fluid escaped. It also contained a number of soft putty-like bodies, each about as large as a walnut. The cyst, when tapped, was

found to have a pedicle, about three inches long, passing to the left broad ligament, and an omental adhesion about three inches wide. These were transfixed and tied. A drainage-tube was inserted.

The after-progress of the case was entirely satisfactory from a surgical point of view. The tube was withdrawn next day. The bladder was washed out with boracic lotion four times a day, with the result of greatly diminishing the cystitis. There were no symptoms of peritonitis, and the abdominal incision healed by first intention.

Two days after the operation the patient became maniacal, exhibiting delusions of persecution with loud screaming, noisy chattering, and the use of most offensive language. This persisted for four days, rendering an examination of the nervous system impossible. The urine remained alkaline, but less offensive; the improvement dating from the time when salol was given internally. The temperature, which had been slightly raised for the first few days, sank rapidly to the normal.

A week after the operation the improvement in the mental condition was such as to allow of a careful examination of the nervous system, and it was then found that the paraplegia had greatly diminished. There was considerable power in each leg, even in the left, which had previously been absolutely paralysed, and the rigidity had disappeared. There was slight ankle-clonus. On the right side the power of movement was quite good, and there was no ankle-clonus. The knee-jerks were still slightly increased on each side. There was still paralysis of bladder and rectum.

From this point the patient's improvement was gradual but continuous; the cystitis and the incontinence of fæces persisted about one month. She was discharged seven weeks from the time of the operation with slight power of walking and of micturition, but a catheter had to be passed daily for another six weeks.

Eight months after the operation the patient was again seen, and found to be in good health in every way. There was no

trace left of the paraplegia except slightly increased knee-jerks, and there was no paralysis of the bladder. Her general health was fairly good.

This case presents certain points of great interest. In the first place the great size of the tumour, and its appearance, which was exactly that of a multilocular cyst, made it surprising that it should turn out to be a dermoid cyst, as shown by it containing a considerable number of hairs and a bicuspid tooth. The fluid evacuated contained cholesterin, fats, small structureless granules, and aggregations of larger granules staining deeply with aniline dyes. The putty-like lumps consisted solely of fats.

From a medical point of view the interest of this case is, that we have a well-marked case of paraplegia, associated with an ovarian tumour and disappearing on its removal. That this was not due to mere pressure on the nerves seemed probable from the character of the paralysis, and by the fact that at the operation the tumour was found to be abdominal, not pelvic, in position. Nor could it have been due to neuritis ascending the nerves from the inflamed bladder, since the paraplegia decreased greatly long before the cystitis showed any marked improvement; and in a paralysis due to this cause as well as in that due to nerve-pressure, there would be no ankle clonus, and probably the knee-jerks would be diminished.

These considerations, and the rapid improvement after removal of the tumour, point strongly to the conclusion that the paraplegia had a functional, not organic, cause. The greatly increased reflexes and the paralysis of bladder and rectum disprove the idea that it might be hysterical, and the only other hypothesis that suggests itself is that the paraplegia was a purely reflex condition, probably due to inhibition of the cord. That the general opinion is against the existence of such a form of paralysis I am aware, but fail to see any other available explanation.

I am indebted to Dr. Purshlow for permission to publish this case.

CASES OCCURRING IN GENERAL PRACTICE.

BY E. N. NASON, M.B., NUNEATON.

Case of Hæmophilia.—C. W., aged 30, a porter at a work-house infirmary, cut his left wrist on August 23rd, 1894. The wound bled freely, but no vessel of any size was divided. The wound was closed by two stitches, and pressure applied. Three days later the arm became painful, and the dressings were removed. The wound was much inflamed and showed signs of sloughing, and the bleeding at once re-commenced. No open vessel could be found, although carefully searched for, but the hæmorrhage continued in a steady ooze. It was now impossible to apply pressure, as the tissues of the forearm above the wound, where pressure had previously been applied, were beginning to slough, although this pressure had been by no means excessive. Various means were tried to check the hæmorrhage, including repeated hypodermic injections of ergotin, but with little or no success. The hæmorrhage continued until September 2nd, by which time the patient's condition was becoming extremely grave, and he was having alarming attacks of syncope with a small rapid pulse. The hæmorrhage then ceased spontaneously; and although the skin and subcutaneous tissues of the anterior part of the forearm, including some of the superficial flexor tendons, sloughed away, the patient made a slow but uninterrupted recovery. Five months later, patient had a sudden effusion into both knee-joints accompanied by pain and slight rise in temperature. These effusions became slowly absorbed, but the attack was repeated in the spring of this year. He had a similar attack, the nature of which was not suspected at the time, some two years ago.

He gives the following history:—He had always bled very readily from very slight wounds, but never dangerously. When 17 years old he had a fracture of the tibia into the left knee-joint, and was in Gloucester Infirmary for nine months, during which time his hæmorrhagic tendency was evidently recognised.

Of six brothers, two died in infancy and one, aged 15, after a severe injury to the arm, in which case hæmorrhage, difficult to control, was a complication. His grandparents on both sides have lived to old age, and no history could be obtained of any ancestor or relative having had a special tendency to bleed.

Acute Septic Hepatitis (?).—A. F., married, aged 25, had a considerable uterine hæmorrhage (? miscarriage) on September 18th. In the afternoon of the next day she had a prolonged rigor, the temperature rising to 104° F. The next day signs of jaundice were noticed, and these rapidly became very marked. The temperature now began to fall and reached 99° F. by September 25th, the icteric tinge also rapidly subsiding again. The uterine discharge, which had never been excessive after the first onset and never malodorous, also ceased. On September 26th the patient got up, but in the evening did not feel so well. On September 27th she began to feel very drowsy and vomited several times. These conditions became more marked during the next two days, and on the morning of September 29th I was called in to see her in consultation. Her condition was then as follows :—

She was well-nourished, but the skin had a yellowish tinge, and there were scattered over the surface the marks of fading petechiæ. Her pulse was 70 per minute and very feeble. There was a loud apical systolic murmur, which was not conducted into the axilla. The temperature was 99° F. The respirations were deep and sighing, but there were no adventitious sounds in the chest. The tongue was furred and blood-stained and the gums soft, and there were sordes about the teeth. Vomiting was continuous, and the vomit of the appearance of coffee grounds, but with no fæcal odour. She was said to have spat up some blood, but no expectoration could be shown me.

She answered questions rationally when roused, but at once relapsed into a drowsy condition. There was some slight abdominal tenderness but no distension. There was no tenderness over the liver which gave no signs of being altered in size. She complained of no pain in the head. Unfortunately the

urine had not been examined and none could at the time be obtained, and although a sample was promised for examination I never received it. The drowsy state noticed became more marked and passed into coma which ended in death two days later, or twelve days from the initial rigor. No *post mortem* was allowed.

PERISCOPE.

THE BACTERIOLOGY OF THE PELVIC ORGANS OF THE FEMALE.

BY THOMAS WILSON, M.D. LOND., B.S., F.R.C.S. ENG.

The bacteriology of the female genito-urinary organs has not hitherto received much attention in this country, or, at least, little has been published on the subject, in spite of the encouraging additions made to the knowledge of the pathology of these organs by the numerous extensive researches of Döderlein, Wertheim, Bumm, Menge, Winter, Krönig, and others in Germany; of Monprofit, Macquart—Moulin, and Hartmann and Morax, in France; and of Whitridge Williams and others in America. Recently, at the Obstetrical Society, a paper has been read by Dr. Robinson on the importance of some micro-organisms in relation to diseases peculiar to women, special attention being given to the streptococcus pyogenes, bacillus coli communis, and the gonococcus. The importance of an accurate knowledge of the varieties and modes of propagation of these micro-organisms cannot be over-estimated in its relation to the rational preventive and curative measures necessary to be observed in the treatment of childbed and in operative gynæcology.

Whence come the micro-organisms which infect the pelvic organs? It is generally agreed that in the vast majority of

cases they are introduced from without, that the patient is inoculated inadvertently, through ignorance, or in spite of every precaution; but undoubtedly inoculated. Dirt on the hands, the nurse, the patient, the bed-clothes, on the instruments or utensils may each or all give rise to infection of greater or less severity. Can the patient, apart from a dirty skin and vulva, infect herself; or are her attendants always to be blamed? Numerous series of observations have been made to settle this point, and the sum of them tends to show that if auto-inoculation does take place, it is at any rate extremely rare compared with infection from the outside.

The observations of Krönig, Menge, Walthard, Winter, Stroganoff, and others show that the vagina always contains microbes, usually of many different varieties and forms; the body of the uterus and the tubes contain none; the cervix certainly in its upper half or more contains none normally. The limit between the bacterium-containing and bacterium-free portions is at or a little distance above the external os. Thus Walthard (*Archiv für Gynäk.*, xlviii., 1895, Ht. 2) places the dividing line at the middle of the cervix, whether the cervical secretion is normal or not. Menge (*Cent. für Gynäk.*, 1895, p. 314) places it at the point where the whitish mucous column in the cervix passes over to the clear one, the former being acid in reaction, the latter alkaline. Stroganoff (*Cent. für Gynäk.*, 1895, p. 1,009) holds that the external os is the limit.

The nature of the micro-organisms inhabiting the vagina has been investigated, but the results so far are not satisfying. There are from fourteen to twenty varieties including all the morphological forms. Streptococci resembling the *S. pyogenes* are common, and have been regarded by Winter and others as really an attenuated form of this microbe, only requiring favourable conditions, such as are sometimes present after delivery, for them to exert their usual pathogenic effect. Krönig (*Cent. für Gynäk.*, 1895, p. 409), with improved and very complete culture methods, has again examined the vaginal microbes, and has obtained, among others, cocci in series of twelve to twenty which

could not be distinguished from the streptococci of puerperal fever. These vaginal streptococci could not be grown in contact with air; they differed in many points from the streptococci found by Walthard; they were found still in the vagina on the third day after labour, and did not appear to pass over into the cavity of the uterus; injection of them sub-cutaneous or intra-peritoneal, into dogs, gave rise to no reaction. This observation seems to cast doubt on the attenuated virus theory. The subject requires further investigation. The germs which are present in the vagina slip in from the ostium vaginæ; the different kinds may be found, according to Krönig, in pure culture, or from two to six varieties—never more—may be found growing together. This is in opposition to the previous observations of Steffek, Döderlein, and Winter, who believe that all the varieties may be found luxuriating together.

The effect of the vaginal secretions on different kinds of germs has been investigated by Krönig (*Deutsch. Med. Wochenschr.*, No. 43, 1894) in pregnant women, and by Menge (*Deutsch. Med. Wochenschr.*, November, 1894) in non-pregnant. In both classes of cases the secretions were found to have a marked power of destroying the vitality of the pyogenic organisms. When these germs were introduced into the vagina, and the secretions afterwards examined at intervals, it was found that after a longer or shorter time the organisms disappeared, both from the fundus and the entrance of the canal. Krönig further shows that syringing the vagina with antiseptic solution reduces or destroys this germicidal power. On this account he recommends that disinfection of the internal genitals should be given up as a part of the routine of antiseptic midwifery.

A paper on the Etiology and Treatment of Puerperal Endometritis was communicated by Krönig to the Leipzig Obstetrical Society on January 21st, 1895 (*Cent. für Gynäk.*, 1895, No. 16, p. 422). The diagnosis of endometritis is usually made from changes in the lochial secretions, from the uterus containing germs, from the general symptoms usually accompanying the affection, and from changes in the temperature and pulse.

Normally the lochial discharge has scarcely a purulent stage ; at first bloody, it changes to bloody serum, and finally to serum. Pus comes from the secretion from the vaginal surface, and from granulating surfaces in the vaginal and cervical canals. The microscope always shows the presence of pus corpuscles, but not in sufficient quantity to cause a purulent appearance of the lochia. Most observers agree that the uterine cavity in the healthy puerpera contains no germs. To settle this question 63 cases were examined in which there was no departure from the normal in the pulse or temperature. In 47 there were no germs in the uterine cavity ; in 3 streptococci were found, in 4 gonococci, and in 6 septic bacteria ; in all these 13 cases the lochia departed from the normal ; when streptococci were present there was increased loss of blood ; when gonococci, the lochial discharge was purulent ; where septic bacteria were found the discharge was stinking. Thus it may be affirmed that in the normal condition the cavity is free from germs.

Of the fission fungi which are found in morbid lochia, the varieties isolated are first of all the streptococcus (Döderlein, Ott, Czerniensi), the staphylococcus (Döderlein), the gonococcus of Neisser, and the bacterium coli (one case by Franqué). Krönig has examined 179 cases of endometritis and divides them into three groups, thus :—

1. The *pyogenic* form, caused by
 - (a) Streptococcus pyogenes, 75 cases ;
 - (b) Staphylococcus pyogenes aureus, 4.
2. The *gonorrhæal* form, caused by the gonococcus of Neisser, 50 cases.
3. The *septic* form, caused by the bacteria of putrefaction, 50 cases.

A comparison of symptoms in the different groups is made, and the streptococcus infection is found to be the most severe, six deaths occurring among the cases being all due to this organism ; this represents a mortality of 8 per cent., or 1 in 12 in the cases of streptococcus infection. Great differences in severity are, however, found in this group of cases ; in four there

was no rise of temperature ; in many, pyrexia only for a day or two ; thus a prognosis cannot be based on the presence of streptococci, but their absence will usually make the prognosis of endometritis better.

To determine the influence of puerperal endometritis on total puerperal morbidity, a series of 1,025 cases were examined, of which 296 cases, or 28·8 per cent. were morbid ; of the whole number, 503 cases were examined during labour, of which 32·5 per cent. became morbid ; 442 cases were not examined, and of these 24·2 per cent. showed an abnormal puerperium. Of the 296 morbid cases, 137 had germs in the lochia ; streptococci were found in 52 cases, staphylococci in 3, gonococci in 33, anaerobic septic bacteria in 43, bacterium coli in 2. Besides endometritis, fever in childbed is caused by (1) inflammation of the breasts, in about 20 per cent. of fever cases ; (2) vaginal tears only, in scarcely 10 per cent. ; (3) extragenital causes, in 38 per cent.

The bacteriology of periuterine suppurations is the subject of a paper by Hartmann and Morax in the *Annales de Gynécologie, etc.*, for July, 1894. The observations on which the paper is founded were carried out in Ferrier's Clinic. In catarrhal or parenchymatous inflammation of the tube, in no case were micro-organisms found. In hydrosalpinx, in 3 cases of tubal pregnancy, and in 2 of retro-uterine hæmatocele with fever, bacteriological examination gave the same result. In 33 cases of suppuration of the appendages the following results were obtained :—

In 13 cases there were no micro-organisms.

- „ 13 „ gonococci were found ; in one of these bacterium coli was also found.
- „ 4 „ streptococci ; in three of these, other germs were also found.
- „ 2 „ pneumococci.
- „ 1 „ bacterium coli commune.

Those in which gonococci were found were all recent cases ;

only 2 had not borne children ; in 3 cases the attack followed the first delivery.

The authors refer to Schauta's and Wertheim's practice of examining bacteriologically the pus obtained during operation, and modifying the subsequent treatment according to the result. This procedure is denounced as unsurgical (whatever that may mean) and as unnecessary. Of thirty-seven suppurative cases operated on by Ferrier since January 1st, 1893, only one patient had died. Drainage was very freely used. Examination of the contents of the drainage-tube showed that where the pus at operation was free from germs or contained only gonococci, the tube remained free from germs for forty-eight hours, and then was infected by different species, especially the staphylococcus epidermidis ; where streptococci were found in the operation pus, these continued to be present in the drainage-tube for seven or eight days. It is therefore recommended to remove the tube in the former cases in thirty-six to forty-eight hours ; in the latter, to drain for a longer time.

Reymond (*Ann. de Gynéc. et d'Obst.*, vol. i., 1895, pp. 306, 459) gives the results of his studies on salpingitis due to gonococci, and on salpingo-ovaritis due to streptococci. In gonorrhœal inflammation of the tube the epithelial covering disappears in places, the cells dropping off singly, and the connective tissue of the mucous membrane being left bare ; leucocytes are very numerous in the tissue immediately subjacent to the epithelium, and pass between the cells into the lumen of the tube ; the surface is covered by an adherent purulent layer composed of a large number of leucocytes and some epithelial cells. It is in this layer and in the pus contained in the tube that the gonococci are found in both varieties of cell, a few only being found between the cells. Only rarely are the gonococci found in epithelial cells which are not detached. In opposition to Wertheim, Reymond has never met with gonococci in the deeper tissues of the wall of the tube. The peritoneal adhesions which are found in these cases are always most marked in the immediate neighbourhood of the fimbriated extremity of the tube

and are due to irritation by pus exuding through the peritoneal opening. As regards the ovary, no abscess of that organ has ever been caused by the gonococcus alone; the lesions found in gonorrhœa are (1) a sclerosis of the periphery of the organ set up in the same way as the peritoneal adhesions, and (2) the formation of numerous follicular cysts under the sclerosed envelope. The only mode by which the inflammation can spread to the tubes and ovaries is by direct spreading along the mucous membrane from the endometrium, in the same way as epididymitis arises from gonorrhœal urethritis. In the early stage a gonorrhœal tube is elongated, reddened, and allows a drop of pus to exude on compression.

In streptococcus infection, on the other hand, the tube is less affected than the neighbouring parts; the ovary is large and distended, the broad ligament swollen and œdematous. Such an infection has in most cases its origin in child-bed or abortion; but there is rarely an opportunity for pathological examination in the early stages, because if death occurs, it is usually due to a generalised infection. In most of the less acute cases these are either abscesses of the ovary or cysts containing pus; these sometimes remain independent of the tube, but more often communicate with it at the fimbriated end. The tubo-ovarian collection, in which the tube communicates with a cavity hollowed out of the ovary, is the most frequent form in which salpingo-oöphoritis due to streptococci has been found by Reymond. The peritoneal adhesions in these cases are not limited to the region of the pavilion, the whole thickness of the tissues being affected, and the peritoneum being attacked on its deep surface. The mucous membrane of the tube is at first little affected, and the epithelium cells may even preserve their cilia. The fimbriated extremity is only a little thickened and infiltrated with leucocytes; the lymphatic vessel in the centre of each fringe is much dilated, and contains leucocytes and streptococci. In some places there is a proliferation of epithelium, several layers being superimposed; below such a collection a group of streptococci is often found. The epithelial layer

is thus attacked from its deeper surface, and its cells are not detached singly, but in masses after having proliferated. The purulent fluid contained in the tube contains few leucocytes and many deformed and degenerated epithelial cells; the streptococci are rare in the leucocytes, more common in the epithelium cells, much more frequently free between the cells. Clinically these cases resemble in their physical signs phlegmon of the broad ligament.

After an examination of the distribution of the streptococci in the tissues, Reymond considers the modes of invasion (1) by continuity along the surface of the mucous membrane, (2) by the lymphatics, and (3) by the vessels. The first method is dismissed as at any rate quite exceptional; the blood vessels and lymphatics take an equal share in facilitating the spread of the streptococci.

On the question of the influence of the gonococcus on the puerperium Reymond refers to the unquestionably exaggerated opinions of Nöggerath, which have been made still more extravagant by some of his followers, some observers going so far as to declare an inflammation of the appendages to be gonorrhœal simply because the husband of the patient has once had a clap; the gonococcus, in fact, has been made to play so large a part in the infection of the appendages that there is no place for other micro-organisms. That gonorrhœa has an influence in disposing the tissues more easily to a secondary infection is not to be doubted, but proofs which can be obtained by bacteriological methods are wanted to settle these questions, instead of mere opinions based on insufficient evidence.

Jayle, at the Anatomical Society in Paris (*Ann. de Gyn.*, 1895, vol. xliii., p. 329) gives the results of bacteriological examination of pelvic suppurations in 30 cases from the practice of Monod, Richelot, and Pozzi. The pus in 12 out of the 30 cases was sterile; in one there were many micro-organisms found on direct examination, but all cultures remained sterile. In ten cases streptococci were found, six times alone, three times with bac-

terium coli, once with staphylococci and bacterium coli. Staphylococci were found in one case, bacterium coli in two, gonococci in four. The question as to whether the presence or absence of microbes in the pus can be determined by the symptoms and signs present before operation is discussed, and it is admitted that it cannot be decided absolutely. The cases however in which one meets the ordinary microbes of suppuration, and especially the streptococcus pyogenes, are in a state of septicæmia, evidenced by earthy complexion, dry tongue, raised temperature, and notable wasting. The cause is usually recent delivery or abortion, or surgical intervention (*e. g.*, curetting). The affection runs an acute course and the lesions are rather peri-uterine or peri-adnexial (phlegmon of the broad ligament, suppurative pelvi-peritonitis). Where the pus is sterile or contains gonococci, there are not the serious general symptoms seen in the above class; if the patient is thin, and the appetite lost, it is rather that the continual abdominal pain causes an exaggerated nervous condition. The course is chronic; the temperature curve is not consistently high, though there are doubtless frequent febrile attacks. Finally the lesions are limited to the appendages.

In addition to causing suppuration, the streptococcus pyogenes acts in other ways, which have been summed up by Robinson in his paper read at the Obstetrical Society (Abstract in *Lancet*, vol. ii., 1895, p. 916). According to him, this microbe is the only one affecting the female pelvic organs which can pass along the lymphatics and veins and give rise to general infection. 1. It may cause death without any obvious lesion. 2. It much more frequently causes suppuration in various tissues. 3. Sometimes false membranes form on peritoneum or in the genital tract with or without suppuration. 4. In some cases of phlegmasia dolens, streptococci are found in clots plugging the veins of the uterine walls and broad ligaments, and even infiltrating the wall of the vein; more rarely they are found in the iliac veins.

In a paper in the *American Journal of Medical Sciences*,

vol. ii., 1893, p 45, Whitridge Williams discusses the bacteriology of puerperal infection, with especial reference to auto-infection. The paper contains many references to the work of others, and gives the results of some observations by the author himself. Auto-infection is admitted to be possible, and its frequency in the practice of those who do not use douches, but rely on external antiseptics, is considered.

Mermann in 900 cases used no douche even in operative cases, and found the morbidity gradually decrease from 21 per cent. to 6 per cent. as experience of his methods increased; in the 6 per cent. all cases of morbidity, even of extra-genital origin, are included. Mermann has published since this time the result of 300 cases in the *Cent. für Gynäk.*, No. 33, 1894. In the whole 1,200 there was no case of fatal infection.

Leopold has used no douches, except in operative cases, since 1889, and finds that his morbidity is only five-ninths as much as when douches were used; he argues, therefore, that douches do harm. From 1886 to 1890 there were 919 labours in which no internal examination was made. In twelve of these there was mild puerperal infection, and of these ten were due to other causes, leaving only two, or 0·21 per cent. as possibly due to auto-infection. Therefore auto-infection plays no such large part clinically as one might expect from the pathological point of view.

How is this to be explained? In the first place, the presence of organisms does not necessarily infect wounds, as shown by certain experiments. Some other conditions, of which we are ignorant, are necessary besides the micro-organisms. And finally, the conditions of labour militate against auto-infection, for the mucus which is thrown out in such large quantities is possessed of an active germ-killing power, and also, so to speak, washes the organisms up from the surface of the mucous membrane, thus making them easier to cast off; then the escape of the liquor amnii may be regarded as a douche acting in the most favourable direction, from within out; and finally the head and the rest of the child, and the placenta, come down like

pistons in a pump. The conclusion is that auto-infection can take place, but that it is very rare, and in practice should be neglected, some other and much more likely cause being diligently sought for in every case of puerperal septicæmia.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

SESSION 1895-96.

The First Ordinary Meeting of this Branch was held in the Library of the Medical Institute, Edmund Street, on Thursday, October 10th, 1895. The chair was taken at 3.30 o'clock by the President, Dr. CARTER; sixty-two members and visitors being present.

The following Members of the Association were elected members of the Branch:—Beilby, Elizabeth, L.K.Q.C.P.I., N. India; Henry, R. W., M.B., The Eye Hospital; Lewis, O. R., M.B., Perry Barr.

The desirability of appointing an Ethical Committee was approved, and the matter was referred to the Council to arrange a scheme.

Dr. Saundby read a paper on the Nauheim (Schott) system of treatment of Heart Disease.

Abstract of Paper, which is, with the discussion, published in the *British Medical Journal*:—The history, origin, and development of the system—Nauheim and its Waters—Professor Beneke and the Brothers Schott—Dr. Bezley Thorne—The Baths—The exercises—Cases for which the system is deemed suitable—Its rational explanation—Desirability of further experience—Possibility of carrying it out anywhere—Artificial baths—Suitability of Droitwich and Buxton.

The paper was discussed by Dr. Bezley Thorne (London),

Sir W. Foster, M.P., Mr. Wm. Armstrong (Buxton), and Dr. Simon.

The following case and specimens were shown :—

Mr. Haslam showed a man, aged 54, on whom he had performed a gastro-enterostomy to relieve the symptom of a pyloric obstruction from growth. The symptom of obstruction had been gradually coming on for nine months previous to his admission in July. On the 24th of that month the abdomen was opened in the middle line above the umbilicus, and the pylorus was found as a hard indurated mass of tissue closely adherent to the neighbouring structures, so much so that excision was not practicable. The jejunum was attached to the anterior surface of the stomach by an oval Murphy's button and the abdominal wound closed. The patient did well in every respect and has only vomited three times since the operation. He is able to eat ordinary food and has no pain whatever; he has gained ten pounds in weight since the operation, and is apparently quite well. The button has not yet passed nor can any trace of it be made out.

Mr. Christopher Martin showed a Pregnant Uterus, removed by abdominal section, in which spontaneous perforation had been caused by hydatigenous disease of the chorion. The patient was *æt.* 20, married five months, and three months pregnant. She was perfectly well until forty-eight hours before operation, when sickness and diarrhoea set in. Next day symptoms of abortion occurred. Eight hours before operation, Dr. Wilson, of Balsall Heath, removed from the vagina a large mass of "hydatid mole," but no instrument was introduced into the uterus. Although there had been very slight external loss, he was alarmed to find the patient becoming rapidly exsanguine. He sent for Mr. Martin, who found her blanched, collapsed, with a thready pulse of 150—obviously suffering from acute internal hæmorrhage. The uterus was enlarged and empty, and digital examination discovered no sign of perforation. There were all the signs of a large quantity of fluid free in the peritoneal cavity. Without delay Mr. Martin opened the abdomen, which was full

of blood. On the right-side of the anterior surface of the body of the uterus was a raised oval purple swelling as large as a walnut, in the centre of which was a round perforation, the size of a threepenny piece, through which a tuft of chorionic vesicles was projecting. The tissue of the uterine wall around this perforation was undermined and infiltrated with chorionic growth. Mr. Martin at once decided to perform total extirpation of the uterus. The broad ligaments on either side were rapidly ligatured and divided down to the vaginal roof, the bladder was separated from the uterus, the vagina opened and the uterus removed. The abdomen having been washed out the ligatures on the broad ligaments were drawn down through the vagina, the latter stuffed with iodoform gauze, and the abdominal wound closed. The patient, though put back to bed nearly pulseless, rallied well, and on the fifth day was out of danger.

Mr. Martin said that spontaneous perforation of the gravid uterus, caused by the infiltration of its wall with myxomatous chorionic villi, was an exceedingly rare condition. He could only find seven or eight cases on record. All of these had died; one from peritonitis and the rest from intra-peritoneal hæmorrhage. His own case was apparently the only one which had been saved by surgical interference.

Dr. Foxwell showed the middle lobe of the right lung of a man who had died of tubercular phthisis. When first examined, six weeks before death, the physical signs over this lobe were—movement limited, sub-tympanitic percussion note, breath sounds feeble (apparently distant) but vesicular. Though no coin-sound could be obtained Dr. Foxwell suspected a small pneumothorax whose communication with the lung had become closed, the breath sounds heard being those of the adjacent fairly healthy tissue. Especially did this explanation seem probable as the expiration, though in no way bronchial, was of equal length with the inspiration. Repeated examination during the next fortnight did not alter this opinion though it grew less certain. But before death the breath-sounds had become harsher and louder, one or two clicks could be detected, whilst

the percussion note maintained its tympanicity. The diagnosis now lay between emphysema and disseminated tubercles. The latter was chosen, as the breath-sounds were far less grating than those usually heard over a patch of emphysema with so tympanitic a resonance, and the clicks were much finer. The section shown confirmed the diagnosis, the tubercles just beneath the anterior surface occurring singly, but some two-thirds of an inch from this small rosettes appeared, the tubercles forming these being still for the most part discrete though moderately pigmented. This striking confirmation of the exactness of Walshe's classical description of the signs of miliary tubercle is, in Dr. Foxwell's experience, sufficiently rare to make it worthy of record.

MIDLAND MEDICAL SOCIETY.

The first ordinary meeting of the Midland Medical Society was held at the Medical Institute on Oct. 23rd, Dr. T. EDGAR UNDERHILL, the President, in the chair.

Mr. Gamgee showed a man aged 20 who on admission had a thyroid tumour half as large again as a large orange, which had been growing for twelve months and causing difficulty in breathing for the past two months. Operation September 12th, 1895. Both superior thyroid and right inferior thyroid arteries tied. Two small processes from upper part of gland and a process at lower part, into which left inferior thyroid artery entered, left in position. Complete relief of symptoms.

Dr. Foxwell showed the lungs of a man who had died of acute pneumonia. The interest lay in the great thickness of the visceral pleura over the greater part of both. This thickening was entirely fibrous, and on it lay recent lymph. The parietal pleuræ were not thickened, and what slight adhesion existed was due to recent inflammation. The first symptom of illness was diarrhoea, and then, in three or four days, stabbing chest pain. On admission there were widespread moist friction sounds; the

pneumonic signs appearing later and very gradually. There was never marked dulness nor intense tubular breathing. The pneumonia crept over the greater part of both lungs. The presence of friction and absence of any flatness in the percussion note prevented the recognition of the old thickened pleuræ. The peculiarity of the dulness and breath sound Dr. Foxwell thought were probably due to the partial distension of both chest wall and lung, owing to the restraining pleura. The cause of the thickening was doubtful. There was no history of alcohol or syphilis. When a child he had "rheumatic fever" twice, but the heart was quite healthy. Still, one or both of these may have been accompanied by pleuro-pneumonia, and resulting from this may have come a slow growth of fibroid material, in a manner analogous to that of scar tissue. The case was a good instance of the great difficulty that sometimes arises in diagnosing thickened pleura in acute pneumonia, and therefore the great value of a knowledge of the previous state of a patient in making one's prognosis.

Mr. Heaton showed a growth removed from the umbilicus of a boy. The history is :— In September, 1893, child, then $2\frac{1}{2}$ years, brought by the mother with a history that when he strained he "*passed water from his navel.*" On making him cry a small jet of a clear yellow fluid ran from the umbilicus. A fine probe passed down a fistula at the navel, downwards and backwards for $3\frac{1}{2}$ inches. The fluid was clear, light yellow, had a peculiar soapy-feel, was strongly alkaline, in fact chemically resembled succus-entericus. There was a large thick-walled pear-shaped sac found passing downwards and backwards, and adherent by a band of fibrous tissue to the small intestine. The sac was partially excised in September, 1893. In August, 1895, the remaining part of sac was removed, and showed on microscopic examination the structure of small intestine.

Explanation.—The vitello-intestinal duct, forming the channel of communication between the intestine and the yolk sac, had been only partially obliterated. The end nearest the intestine was represented by a fibrous cord. Its outer half opened at the

umbilicus, and became distended by secretion into a thick walled muscular sac.

Dr. Short showed a portion of intestine from a case of enteric fever. The Peyer's patches were of unusually large size, measuring several inches across, with deep and extensive ulceration. Tremor of the hands had been a marked symptom throughout. Towards the end of the third week of her illness the girl, who was subject to epilepsy, had a severe fit. After this the pulse rapidly failed, and she died in about twenty-four hours.

Dr. Short also showed the liver, stomach, and pancreas from a woman æt. 64. The stomach was divided into two cavities by an indurated cicatricial band, which appeared to be secondary to a large transverse ulceration. There were several hard nodules in the pancreas and neighbouring glands, strongly suggesting a malignant origin. The liver showed a large abscess towards the posterior part, and several smaller ones in various parts of the gland; whilst scattered all over it were numerous soft hæmorrhagic foci, obviously rapidly breaking down. Nothing was found elsewhere to suggest a pyæmic origin. The marked feature of the case was the latency of the symptoms up to a few days before death.

Mr. Chavasse read notes of a case, and exhibited a male adult upon whom a primary amputation of the entire upper extremity had been performed for a machinery accident in May last. After the initial shock had been overcome, recovery was rapid and healing complete in a month.

REVIEWS.

TEXT-BOOK OF OPERATIVE SURGERY.*

IN writing this volume its author "has aimed at making it not merely useful for teaching purposes but also, in view of his extensive experience, a reliable guide to general practitioners and surgeons in operating on the living subject." However far the Swiss surgeon may have succeeded in the second of his aims, there is no doubt that he has signally failed in the former, at least so far as "teaching" in this country is concerned. The book is essentially "Kocher" from one end to the other, and is therefore of exceptional interest; but one might almost imagine, after carefully reading it, either that Berne enjoys the advantage of producing almost the first and greatest of all operating surgeons, or that the Professor himself is indifferent to the opinions of most of the past and present masters of the science. The volume is divided into four sections—Principles; Special Operations; Excisions and Resections; Amputations and Disarticulations—and on the whole the division may be regarded as a good one.

Part I. deals with anæsthesia, wound treatment, and the direction of skin incisions. Kocher always employs ether as an anæsthetic, unless there is some contra-indication to its use, and thinks chloroform should only be administered when ether cannot be safely given. Ether should be used freely, and with as little air as possible. Chloroform, on the other hand, should be given by the "drop" method, and freely diluted with air, the breathing being watched more closely than the pulse. His

* Text-Book of Operative Surgery. By Dr. Theodor Kocher, Professor of Surgery, and Director of the Surgical Clinic in the University of Berne. Translated, with the special authority of the author, from the second revised and enlarged German edition by Harold J. Stiles, M.B., F.R.C.S. Edin., Senior Demonstrator of Surgery in the University of Edinburgh, etc. With 185 illustrations. London: Adam and Charles Black. 1895.

method of wound treatment is essentially aseptic, and his dressings are of the simplest kind. Everything which can be is sterilised by heat, either dry or moist, and where heat is unavailable, he relies on lysol, corrosive sublimate, and alcohol. He employs gauze for swabs and for dressing, silk for ligatures and sutures, and glass for drainage-tubes. Great importance is attached to mechanical cleansing of the skin of the patient and of the fingers of the operator and his assistants. The indications of the highest importance in securing the rapid healing of wounds are (1) the accurate apposition of the entire breadth of well-nourished wound surfaces and (2) the conveying away of discharges when complete closure of the wound is impossible. Drainage-tubes should always be brought out of separate openings, not through the operation wound, and should be removed within forty-eight hours.

"Wounds," he says, "may be brought into four categories as regards the treatment applicable to them. 1. Wounds which are severely infected, widely gaping wounds, wounds communicating with the alimentary canal, and old wounds: *open treatment with continuous antiseptics*—that is, antiseptic tampons and compresses frequently changed. 2. Slightly infected wounds, and the majority of accidental wounds which are not placed at once under treatment: *iodoform stuffing with secondary suture*. 3. Aseptic wounds made by the surgeon in which the accumulation of blood and blood serum cannot be avoided with certainty: *primary suture with careful drainage*. 4. Wounds made aseptically by the surgeon which can be brought together in their entire length and depth: *primary suture*."

The section on the "direction of skin incisions" is of particular interest. According to the investigations of Sanger upon the planes of cleavage of the skin, the tension of the skin is very different in different directions, and two incisions at right angles to one another display a very different amount of retraction of the edges of the wound; the one gaping, whilst the edges of the other remain in contact without any artificial aid. These facts are to be borne in mind in determining the directions of

incisions, even although in individual cases other considerations come into play. Kocher therefore describes what he calls "normal incisions" for every region in the body, and many of these run quite in a contrary direction to those generally adopted; for example, the incision for ligature of the common carotid artery in the neck is horizontal instead of obliquely vertical; the cholecystotomy incision is oblique (parallel to the ribs) instead of vertical; suprapubic cystotomy is made through a longitudinal instead of a vertical incision. We have tried several of Kocher's normal incisions, and have been pleased with them. More than a dozen well-executed plates are devoted to illustrations of this subject of normal incisions.

Part II., on special operations, occupies more than two-thirds of the whole volume, and is subdivided into the following sections:—Cranium, facial portion of the head, superior lateral triangle, anterior triangle, inferior lateral triangle and back of the neck, thorax, back, lumbar region, abdomen, perineum, sacral region, upper and lower extremity. The section is so comprehensive and so wide that we can only refer to a few of the more interesting topics. The relations of the cerebral convolutions to the skull are determined by a method of "percentage measurements," for which is employed a simple instrument consisting of two flexible strips of steel, one of which runs vertically from the occipital protuberance to the crista glabellæ, and the other slides upon it, and is so arranged that it can cross it at any point and at any angle. The method may be easily committed to memory, and will doubtless serve the purpose for which it is intended, although in our opinion there are much simpler guides which are sufficiently accurate for all practical purposes, particularly in these days of "big trephine crowns." Considerable attention is given to the several operations on the trigeminal nerve, and each is described with a minuteness and an exactness which makes the procedures quite easy to follow. In cancer of the tongue Kocher operates either through the mouth, splitting the cheek transversely from the angle of the mouth where freer access is needed; or, when the structures of the

buccal floor are invaded and lymphatic glands are enlarged, he employs his own well-known method, by the following external incision:—"Beginning below the mastoid process, it extends along the anterior border of the sternomastoid and then proceeds along the crease between the floor of the mouth and the neck to the middle line, and lastly, upwards to the lower border of the jaw."

In some operations on the anterior triangle of the neck it may be necessary to remove a portion of one pneumogastric nerve, a procedure, according to Kocher, which "does not endanger life, and indeed may not give rise to any symptoms whatever." It is interesting to learn that he divides the thyroid isthmus in tracheotomy only after encircling it with two "firmly-tied ligatures."

We turn with interest to operations performed on the thyroid gland, as the author's experience here is probably unique. He says in many instances the excision of a goitre is "very easy," but in certain cases—especially in malignant, in inflammatory, and in diffused colloid goitres—it is "attended with great difficulty." The most important point is to make a very large skin incision, and when it is necessary, to avoid disfigurement, the transverse curved incision—"one collar incision"—is to be recommended as the best. We can bear out this statement from personal experience of several cases of our own. Another incision is the "angular," which he specially recommends to operators of limited experience: it is "commenced over the prominence of the sternomastoid at the level of the thyroid cartilage, and extends almost transversely in the direction of the skin creases as far as the middle line of the neck, and from thence vertically downwards to the supra-sternal region." We prefer this angular incision to the median, as commonly practised in this country. Kocher likes his own operation of "Enucleation-resection" rather than simple enucleation; but in this we cannot agree with him, as we have found enucleation to be easy, safe, and practicable in the majority of nodular and cystic bronchoceles. The whole surgery of the cervical region is profusely illustrated with excellent plates.

In excision of the breast for carcinoma, he insists on the importance of removing the whole breast, underlying fascia, and axillary glands in a single piece, and urges the importance of making the upper incision first, and removing the tissues from above and within downwards and outwards. Kidney operations are performed from the loin, and are exactly on the well-known lines of British surgery. It is interesting to learn, however, that before removing a diseased kidney, Kocher always prolongs his lumbar incision anteriorly and opens the peritoneum, so as to enable him to pass his hand into the abdominal cavity and examine the condition of the opposite kidney.

The surgery of the abdomen is excellent, and worth careful study by the most experienced. He approves of gastrostomy in malignant strictures of the œsophagus, and speaks most highly of an operation devised by Albert. All resections or anastomoses within the abdomen are made without any of the mechanical plates, bobbins, or buttons so much in vogue at present. Kocher trusts to the efficacy of Czerny-Lembert sutures and his own digital dexterity, and the results in his hands appear to be magnificent. We have recently performed gastro-jejunosomy by the method he describes, and are thoroughly satisfied with the procedure. Chole-cystotomy and kindred operations are made through a large oblique incision running parallel to and about an inch below the costal margin, an incision similar to that recently advocated by Morison, of Newcastle-on-Tyne. We have several times made use of this oblique incision, and find it immeasurably better than the vertical.

Radical cures for the several varieties of hernia are described in detail, and resemble in the main some of those well known in England. An ingenious method of "displacing" a hernial sac through a puncture opening through the muscular layers in the neighbourhood of the internal rings is deserving of trial. Kocher resects the vermiform appendix in a manner identical with that recently figured and described by Barker in the medical journals.

In making a fæcal fistula or an artificial anus, he insists on the importance of securing the intestine closely and firmly to the parietal peritoneum. We have always sewn intestine to skin edges, and think that by this means we secure a firmer union between the bowel and the abdominal parietes. Excision of intestine is done by circular enterorrhaphy with the Czerny-Lembert silk suture. It is interesting to note that the only operations on the bladder described are supra-pubic cystotomy, opening the bladder with resection of the symphysis, and puncture of the bladder. The several varieties of perineal lithotomy are mentioned only to say they are superseded by the high operation.

The short section on the Sacral region deserves careful consideration, more particularly those excisions of the rectum which are made through a parasacral incision. The surgery of the upper and lower extremities is unnecessarily elaborate we think, many operations never likely to be performed being described in the minutest details.

Part III. is devoted to excisions and resections, and here again most of the possible operations are described ; we can therefore only refer to a few of the most important. Kocher excises the ankle joint through a transversely curved external incision beginning opposite the line of the ankle, just at the outer side of the extensor tendons and carried in a curved direction below and beyond the top of the external malleolus, and from thence upward along the tendo Achilles but without injuring it. In excision of the knee he prefers the well-known anterior curved incision made familiar to us by Erichsen, and altogether avoids the subperiosteal operation of Ollier. The sections through the bones are made in a curved direction, and he thinks there is no necessity for pegs or sutures to fix the bones together. Arthro-tomy and arthrectomy of this joint are executed by him in an effective manner by an original operation of much ingenuity. He claims to have been the first ("along with Macewen") to have performed the operation of supra-condyloid osteotomy of the femur, and recommends an oblique incision downwards and

outwards in the lines of cleavage of the skin, making a wound apparently large enough to allow of inspection of the bone before it is divided. As an example of how little notice is often taken of other surgeons' work we may instance his description of "osteotomy and sub-trochanteric cuneiform resection of the femur," a subject which Adams, of this country, and Sayer, of America, have made almost their own, and whose work is not referred to here. The hip joint is excised through a very long curved incision made exactly in the opposite manner to the one generally adopted in England. Excision of the wrist is performed through a single dorso-ulnar incision. The elbow likewise through a long single opening on the dorso-radial aspect of the joint. Excision of the shoulder by the anterior incision is associated here with the name of Spence, but in Berne they know not the brilliant Scotch surgeon apparently, and give the credit which is undoubtedly his, to Langenbeck, Baudun, Roeret, Dubreuil, and other continental operators.

Part IV., on "Amputations and Disarticulations," is on the whole poor and casually written. An interesting general view is given of the evolution of the methods of amputation, and a preference expressed for the oblique circular incision in simple amputations of the limbs. We can scarcely agree with the author in his poor estimate of "flap" amputations, and think also that "transfixion" facilitates the performance of many operations. Among amputations of the foot we find no mention of Hey's operation, although we hear of Texter's and Jager's. Disarticulation at the ankle joint (Syme's amputation) is said to have the disadvantage of "leaving a cavity between the heel flap and the bones," and Kocher therefore cannot recommend it. He has an improved method of his own, as we might expect, but his improved method strikes us as being practically identical with the amputation known as Roux's. Pirogoff's amputation is preferable, he says, but this is not the experience of English or American surgeons.

In discussing amputations through the knee joint, he entirely ignores the beautiful operation of Stephen Smith by two equal

lateral flaps, and advocates his pet oblique circular instead. He refers to Carden's amputation through the lower third of the thigh, but curiously does not mention the much better procedure of Spence. We had prided ourselves in Birmingham that one of the best amputations at the hip joint originated with Furneaux Jordan, whose name is attached to this particular operation throughout the English-speaking nations; but apparently we are quite wrong in the matter. Kocher describes the operation exactly as we saw Jordan do it in his first case; but the name of Jordan does not appear in the volume! Similarly also in the analogous amputation at the shoulder joint, it is Kocher and Kocher only who devised the operations which go elsewhere by the names of Spence and Larrey! Still one more example of the same thing, and the book is finished: Berger's amputation at the shoulder girdle is not satisfactory to Kocher, so he publishes a "new and improved" which is more to his own liking.

We would say, in conclusion, that we have rarely read a work of less than 300 pages with more profit or with greater interest, and we close the volume with a feeling that we have spent a few hours with an undoubted genius with real and lasting benefit to ourselves. The book is well got up, and the illustrations first class. We hope every operating surgeon will at the earliest moment secure a copy, as he will find it of the greatest value with reference to the most recent operations. Dr. Stiles' translation is excellent, and is very pleasant to read.

THE THEORY AND PRACTICE OF COUNTER-IRRITATION.*

THIS monograph is well written in clear and forcible English, and, so far as the style and manner go, might be taken by not a few writers of medical essays as a model. With regard to the

*The Theory and Practice of Counter-irritation. By H. Cameron Gillies, M.D. London: Macmillan. 1895.

matter, however, it must be admitted that the book is disappointing. Dr. Gillies takes a very limited view of what is generally included in the term counter-irritation, so limited, indeed, that anything beyond the stimulation of a callous ulcer proves too great for his argumentative powers.

The early chapters of the book criticise the many theories of counter-irritation put forward by authorities. One man is pitted against another; arguments are compared, ridiculed, and demolished, until the reader decides that many rival views are only similar ideas clothed in different words; and then the author states his new theory. The gist of this, so far as we can make out, appears on page 113 in the following sentence:—"Whatever good comes by the use of counter-irritants is because, by their irritant effects, they stimulate the activity of the tissues of the part to which they are applied, and accelerate the blood supply thereto, so increasing nutrition or repair as the need may be." But what is there new in this? Or, conceding the novelty, how does it explain the greater number of the effects of counter-irritation? Let us take, as examples, the marked effect on a phthisical cough when the chest is blistered; the relief of pain by counter-irritation over the trunk of the nerve in cases of sciatica; and the removal of headache by placing the feet in hot mustard and water. The author's theory does not explain any of these results. In fact, the narrowness of his views with regard to what should be considered as counter-irritation is well shown by this observation:—"We are content to leave it in doubt whether inflammatory conditions of the lungs and liver and other internal organs come within the range in which counter-irritation is useful." The author may be content, perhaps glad to leave it; but this is just what we want to know. His theory of blood acceleration to the irritated tissues is not sufficient. It may do for the callous ulcer example, but it is inadequate to explain any of the well-known clinical facts cited above. It might be said that the acceleration of the blood to a part causes withdrawal from some other part; but the author is emphatic in excluding from his theory any such interpretation of counter-irritation.

The second part of the book, the practical portion dealing with the uses of counter-irritation generally and the means and methods of carrying it out, is distinctly the better part, and is well worth reading.

AN ADAPTATION OF THE CIRCULAR METHOD OF AMPUTATING TO DISARTICULATION AT THE ELBOW AND KNEE.*

THE method of procedure is this:—The limb being held out quite straight, a circular incision is made in the ordinary manner below the condyles down to the deep fascia. Skin on the flexor aspect (anterior in arm, posterior in leg) at once retracts considerably, making the line of incision oblique. Two small incisions are now made from immediately below the condyle to the original cut. The flexor flap will now still further retract, and, aided by a few touches with the knife, will almost disappear. The extensor flap is now dissected up as far as the head of the tibia in the leg and to above the olecranon in the arm, care being taken to cut on the deep fascia, and so to reflect the subcutaneous cellular tissue and its contained blood vessels along with the skin. This flap is loose and ample, being taken from a part where the skin is naturally redundant in order to accommodate itself to the normal action of flexion. After reflection of this flap—practically the only one—disarticulation should be performed (in the arm and knee both) from the front, the patella being saved in the latter case. It will be found that there is a long flap on the extensor aspect, anterior at knee and posterior at elbow, with practically no flap at all on the flexor aspect of the condyles. This single flap falling nicely over the condyles, and being indeed in its natural position, is easily secured by stitches. When healing has taken place, the appearance of the stump is very natural and most satisfactory.

* An Adaptation of the Circular Method of Amputating to Disarticulation at the Elbow and Knee. By A. G. Miller, M.D., F.R.C.S.E. Reprinted from the *Edin. Med. Rev.*, 1895. Edinburgh: Oliver and Boyd. 1895.

The following advantages are claimed for it over all other methods:—

1. The procedure is simple, easy, and quickly performed, and no elaborate details to remember.
2. The skin flap from the extensor aspect is well accustomed to pressure and to the situation in which it is ultimately placed over the condyles.
3. Cicatrix is in a most favourable position.
4. Much tissue is not required. The operation is therefore suitable both for primary and secondary amputations.

The reprint is illustrated by drawings which show very good results.

THE MEDICAL PROFESSION AND FREEMASONRY.*

THIS is a reprint from the proceedings of the Quatuor Coronati Lodge, No. 2,076, London.

Part I. gives a short biographical account of the leading medical lights in Freemasonry, from Avicenna, A.D. 980–1037, the prince of Arabian physicians, to Robert Plot, 1640–96, the first Professor of Chemistry at Oxford.

Part II., The Moderns, consists of lists of medical members of various lodges, beginning with the first English Grand Lodge, which was established in 1717, and is full of the highest interest, containing, as it does, information concerning some of the most brilliant physicians and surgeons down to the present time in England, Scotland, Ireland (though we fail to see why the medical Masons of Wales are left out), Germany, Northern Europe, France, etc., and America; indeed, all the known Masonic world. It evidently has been a labour of love which has cost its author very great research and much correspondence.

The truth of the remark on page 146 is well known to all provincial masons—"that by the influence of the brethren who have been or are practitioners in medicine or surgery, more than

* The Medical Profession and Freemasonry. By W. Bro. R. F. Gould, Past Grand Deacon of England.

by the members of any other single profession, has Freemasonry been shaped and moulded into the form in which we now possess it."

This statement comes from a distinguished London Mason; but how much more is it true of Masonry in the provinces. If the history of the three Midland provinces which meet in Birmingham could this day be written, it would doubtless surprise even the brethren themselves when they are shown how much their medical brethren have had to do with the efforts to raise Freemasonry to the high pitch of excellence it now occupies, and the esteem in which its principles are held by men of the present day.

DENTAL MATERIA MEDICA.*

THE fourth edition of this useful little book has been revised by Mr. Leslie M. Stocken and Mr. J. O. Butcher. Some matter which may be termed "out of date" has been omitted, and several new remedies, which have now been sufficiently tested, are dealt with in a concise form. The drugs are arranged alphabetically, making the book convenient for reference by practitioners; its clear explanations and directions will also prove most acceptable to students.

Correspondence.

VASCULAR DEGENERATION OF THE VESTIBULE, OR KRAUROSIS VULVÆ

To the Editors of the BIRMINGHAM MEDICAL REVIEW.

Sirs,—I could hardly admit Aristotle as a writer of classic Greek, and therefore am not influenced in my opinion by Mr. Taylor's quotation from him. I do not know the reference to Plato's use of the word, and cannot find it.

* Dental Materia Medica. Stocken.

But the most important difference between us is the confusion between senile contraction and the contraction resulting from vascular degeneration, which Mr. Taylor says are indistinguishable. That is not so, as he himself admits. The one is characterised by the changing spots and intense pain; in the other the spots are never seen and the contracting process is absolutely painless. The time of life for vascular degeneration is not limited, whilst of course senile contraction does not occur before the climacteric change either natural or induced.

I am, etc.,

LAWSON TAIT.

7, The Crescent, Birmingham,
October 14th, 1895.

The American Year Book of Medicine, Edited by Dr. George M. Gould, of Philadelphia, will be published in January next by Mr. W. B. Saunders of that city.

CORRECTION.—We regret that in Mr. J. Headley Neale's paper, which appeared in our last number, the word "Saurian" was by mistake substituted for "Simian" (p. 218).

New Books, etc., Received.

Modern Developments of Harvey's Work—the Harveian Oration, 1894. delivered before the Royal College of Physicians, by T. LAUDER BRUNTON, M.D., F.R.S., F.R.C.P., Assistant Physician to St. Bartholomew's Hospital. London: Macmillan and Co. 1894.

A smaller Atlas of Illustrations of Clinical Surgery. By JONATHAN HUTCHINSON LL.D., F.R.S., Consulting Surgeon to the London Hospital, and late President of the Royal College of Surgeons. London: West, Newman and Co. 1895.

Elements of Practical Medicine. By ALFRED H. CARTER, M.D., F.R.C.P., Senior Physician to the Queen's Hospital, Professor of Therapeutics, Mason College, Birmingham. Seventh Edition. London: H. K. Lewis. 1895.

The Structure of Man, an Index to his Past History. By Dr. R. WIEDERSHEIM, Professor in the University of Freiburg, in Baden. Translated by H. and M. Bernard; annotated and prefaced by G. B. Howes, F.L.S. Illustrated. London: Macmillan and Co. 1895.

Cutaneous Medicine. A Systematic Treatise on the Diseases of the Skin. By LOUIS A. DUHRING, M.D., Professor of Diseases of the Skin in the University of Pennsylvania. Part I. Illustrated. Philadelphia: J. B. Lippincott Co. 1895.

- Diet in Sickness and in Health. By MRS. ERNEST HART, with an Introduction by Sir HY. THOMPSON, F.R.S. London: The Scientific Press Limited. 1895.
- Dental Materia Medica and Therapeutics. By JAMES STOCKEN, L.D.S. Eng., late Dental Surgeon to the National Dental Hospital. Fourth edition, revised by Leslie M. Stocken and J. O. Butcher. London: H. K. Lewis. 1895.
- The Climates and Baths of Great Britain; being the Report of a Committee of the Royal Medical and Chirurgical Society of London. Volume I. London: Macmillan and Co. 1895.
- The Practice of Massage; its Physiological Effects and Therapeutic Uses. By A. SYMONS ECCLES, M.B. Aberd. London: Macmillan and Co. 1895.
- A Summary of the Vital Statistics of the New England States for 1892. Compiled under the Direction of the Secretaries of the State Boards of Health. Boston: Danville and Upham. London: P. S. King and Son.
- Observations on Congenital Dislocation of the Hip. By BERNARD E. BRODHURST, F.R.C.S., Senior Surgeon to the Royal Orthopædic Hospital. London: J. and A. Churchill. 1895.
- The Increase of Cancer. By W. ROGER WILLIAMS, F.R.C.S. Reprint from the *Liverpool Medico-Chirurgical Journal*, July, 1895.
- An adaptation of the Circular Method of Amputating to Disarticulation at the Elbow and Knee. By A. G. MILLER, M.D., F.R.C.S.E., Surgeon to the Royal Infirmary, Edinburgh. Reprint. Edinburgh: Oliver and Boyd. 1895.
- Perforation in Enteric Fever; its Surgical Treatment. By FREDERICK HOLME WIGGIN, M.D., Visiting Surgeon, New York City Hospital (B. I.) etc. Reprinted from Proceedings of the Connecticut Medical Society. 1895.
- Cystic Tumours of the Vaginal Vault, with Reports of two cases. By FREDERICK HOLME WIGGIN, M.D., Visiting Surgeon to the New York City Hospital (B. I.), Gynæcological Division, etc. Reprinted from the *New York Medical Journal* for July 13th, 1895.

* * * Authors can have reprints of articles at the following rates:—

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THE.
BIRMINGHAM MEDICAL REVIEW.
DECEMBER, 1895.

ORIGINAL COMMUNICATIONS.

REMARKS ON
THE NAUHEIM (SCHOTT) TREATMENT OF
HEART DISEASE.*

BY ROBERT SAUNDBY, M.D., F.R.C.P.
PROFESSOR OF MEDICINE IN MASON COLLEGE ; PHYSICIAN TO THE
GENERAL HOSPITAL, BIRMINGHAM.

GENTLEMEN,—When I put down my name to read a paper upon this subject, I intended it to be the result of several months' clinical experience ; but, having accepted the invitation of your secretaries to read it at this meeting, I have been obliged to content myself with something less, and I must ask you to excuse me if I am able to do little more than summarise information already published.

Nauheim is a small town in the Grand Duchy of Hesse, about forty minutes' journey by rail, due north, from Frankfort, and only a pleasant day's excursion by carriage from Homburg, where I was staying for a few days last August. When I visited Nauheim Dr. Schott received me in the kindest manner. He began by taking me to see an American doctor who was undergoing the treatment, and who was very much interested in the system and familiar with its details. He showed me notes of a number of cases which had been under Dr. Schott's care, and after looking over them we walked to Dr. Schott's house, where we were joined by Dr. Bezly Thorne.

* Read at the meeting of the Birmingham and Midland Counties Branch.

Dr. Schott introduced a German doctor who was also under treatment, and who kindly allowed me to examine him. His heart was greatly dilated—to the left, an inch and a half beyond the vertical nipple line; to the right, one inch beyond the right edge of the sternum; above, to the upper border of the left third costal cartilage. There was no murmur except a slight systolic blowing in the pulmonary area. His pulse was 120, of low tension, and unequal in force and volume. Dr. Thorne made him go through the first and second exercises (see below), which took three or four minutes, and I was then asked to percuss his heart again. I may mention that I had been unable to localise the apex beat. On this second percussion I was startled to find that the area of dulness had receded by about an inch in every direction. The pulse was 112, but I could not recognise by the touch any alteration in its character. As I was unwilling to admit that the heart had actually retracted to such an extent so quickly and after two such very simple movements, I suggested that perhaps the lungs had expanded so as to overlap the heart. Dr. Schott said they were quite used to that objection; but had I been able to localise the apex beat, I could not have doubted if that had receded, which he assured me it did. Moreover, he added, if I had percussed out the liver dulness I should have found that the upper margin remained unaltered instead of receding downwards, as it should do if the lungs were more fully expanded.

After this we went to see the baths, first climbing up to the reservoirs in which the brine is stored and its carbonic acid allowed to escape. The water, which flows up in two great white foaming fountains, becomes, on standing, quite yellow from the precipitation of iron previously held in solution by the gas. This gas-free water is used for the earlier baths; but later on in the course, the water is drawn by another set of pipes direct from the spring, and is highly charged with CO_2 ; and in the strongest bath of all, the so-called "Strombad," the foaming water is allowed to flow in and out of the bath in a continuous stream, while the patient lies in a good imitation of a strong surf.

I did not have an opportunity of seeing a patient in the bath, but Sir T. Grainger Stewart and Dr. Holman (who were staying at Homburg) told me they saw and examined a man whose heart was greatly dilated, and his pulse 124, irregular, small, and irritable. After three minutes' immersion in the bath (reservoir water) the pulse had fallen to 114, and in six minutes to 108, whilst it had become evidently better filled. After eight minutes they percussed his heart, and found that the dulness had receded an inch in every direction. Unfortunately they omitted, as I did, to take the level of liver dulness; but I shall refer to this later on, and will show that there is no reason to doubt the correctness of these observations.

HISTORY.

The beneficial effects of Nauheim baths in the treatment of chronic cardiac disease were first proclaimed by the late Professor Beneke, about 1872, before which time there existed an unfounded dread of employing them in these cases. A few years afterwards his teaching was reinforced by monographs from the pens of Drs. August and Theodor Schott, and the Nauheim bath treatment for heart disease gained considerable repute in Germany. The success obtained by the Zander movement cure induced Dr. A. Schott to devise a system of mild gymnastics or drill for the treatment of neurasthenic and hysterical patients, of whom a considerable number come annually to Nauheim. Some of these patients had rapid weak hearts, and it was discovered with some surprise that the exercises, instead of quickening the heart's action, slowed and steadied it; further experience showed them that this result followed also in organic disease of the heart, so that a method originally devised for steadying and strengthening the nervous system proved to be a valuable adjunct to the bath treatment of cardiac disease. This little history was told me by Dr. Schott himself, and noted down at the time. The method thus evolved was put into practice and described in the medical press without attracting much attention. Undoubtedly our present knowledge

of the subject is due almost entirely to the enthusiastic work of Dr. Bezly Thorne, who was first led to its study by observing that cases of cardiac disease which had been sent to Nauheim for rheumatic or gouty complications returned so much improved that he was impressed with the importance of the new system, and made himself thoroughly acquainted with its details by repeated visits to Dr. Schott.

The more he saw of the method and the more he learnt of its results the more convinced he became that a real discovery had been made of the greatest utility, and one which was capable of general application. In May of last year he published an account of it in the *Lancet*, which was in the main a reproduction of an article Dr. Schott had contributed to the same journal three years previously, but he was more successful in arousing attention, and from that time the profession has gradually evinced more and more interest in the work, a large number of English patients have been sent to Nauheim, and articles on the subject have been published by Sir P. Smyly, Dr. Wethered, Dr. John Broadbent, Sir William Broadbent, Dr. Allen Sturge, and Dr. Armstrong. In all these the method is spoken of with favour, and some important results are given.

Dr. Bezly Thorne has increased our debt of obligation to him by publishing an admirable handbook, which explains the system very clearly, and by means of excellent illustrations enables anyone to learn the exercises.

The employment of regulated muscular exercises in the treatment of heart disease has been also supported by Dr. Lauder Brunton, Dr. Symons Eccles, and Dr. Harry Campbell, although the two last do not mention the Schott method.

THE BATHS.

The medicinal waters of Nauheim are derived from twelve springs, of which four are used for drinking, and three for the baths. The bath waters contain from 2 to 3 per cent. of sodium chloride, 2 to 3 per 1,000 of calcium chloride, some carbonate of iron, and a very large amount of carbonic acid

gas. The waters used for drinking contain the same constituents, but in varying proportion, the Kur- and Karlsbrunnen being mainly saline, while the Ludwigsbrunnen is alkaline, and the Schwalheimerbrunnen rich in iron.

The baths are given at a temperature of from 92° to 95° F., and their duration is from six to eight minutes. The course begins with a 1 per cent. salt bath at 95°, and as time goes on the amount of solids may be gradually increased, the temperature lowered to 85.5°, and the time of immersion increased to twenty to thirty minutes, but throughout the course must be interrupted by frequent intervals of one day. Later on the baths contain the water charged with carbonic acid gas, and finally, in suitable cases, the "Strombad," with its continuous rush of foaming water is permitted. After each bath the patient should rest an hour. The lowest temperature and maximum duration mentioned above must be approached very cautiously, and should not be employed in grave cases. The immediate effects of the bath are to reduce the rate of the pulse and to increase its force and tension; at the same time the area of cardiac dulness retracts in all directions. After the baths these effects gradually disappear, but it is claimed that at the end of the course, which should last at least six weeks, and often may be prolonged with advantage, permanent improvement is effected. It is also maintained that early rheumatic valvular affections are cured, murmurs disappear, and myocarditis is arrested.

It is well known that a bath of lower temperature than the body causes more or less contraction of the vessels of the skin, while a bath which is hotter dilates them; moreover, the gaseous or saline contents do not stimulate to greater vascular contraction; on the contrary, they favour dilatation. All authorities are agreed that a cool bath eventually lowers the number of heart beats, though some have observed an initial rise, possibly due to psychical influences, while in baths hotter than the body or of the same temperature the frequency of the pulse is increased. The question is whether this reduction of the number of the heart beats is merely the result of the operation of Marey's law—

contraction of the vessels of the skin increasing the blood pressure, and thereby slowing the heart—or whether it is the consequence of a reflex inhibitory influence, as Dr. Schott believes?

Leichtenstern, although writing with some scorn of those who (pleading like Cicero *pro domo*) contend that lukewarm or cold baths, and especially salt baths rich in carbonic acid, are a tonic of the first rank for a weakened heart, says that if the effect is produced by the vascular contraction of the skin stimulating the left ventricle, such baths are not without danger, but “it is different if the cool simple or salt bath is to act as a regulator of the heart’s activity, the possibility of which has not yet been shown by any proof. If it were in that way possible to bring a heart which was arrhythmic and wearing itself out in unusually frequent and fruitless contractions to a more regular and slower action, in that case the systole would be prolonged and more yielding, the emptying of the ventricle would be completed, the diastolic pause lengthened, and along with that the removal of the fatigue products favoured and the nutritive condition of the heart’s muscles improved.” This is the *modus operandi* of the baths according to Dr. Schott, but it has certainly not been demonstrated.

Diagrams and pulse tracings, taken from cases treated during the last few weeks in the wards of the General Hospital, support the general proposition, namely, that the baths diminish the area of dulness, while increasing the force and tension and diminishing the frequency of the pulse.

I have been much impressed by the testimony of my friend, Dr. Allen Sturge, of Nice. He went to Nauheim in June, 1894, to try to get cured of an irritable heart, the consequence of an attack of influenza in the previous February. At the commencement of treatment his pulse was 100, and his heart’s apex was 2 cm. external to the vertical nipple line. After five weeks’ treatment by baths and massage only, without exercises, his pulse had fallen to 64, the heart’s apex receded to 1 cm. inside the nipple line, and he was completely restored to health. In his

case, Dr. Sturge explains, the exercises seemed to make his heart more irritable.

In the opinion of Dr. Schott and of Dr. Bezly Thorne these baths may be chemically prepared, and Mr. Armstrong, of Buxton, has given the following formulæ for a series of such artificial baths, in which the quantities are calculated for 40 gallons of water :—

Bath No. 1. Sod. chlorid., 4 lbs. ; calc. chlorid., 6 ozs.

Bath No. 2. Sod. chlorid., 5 lbs. ; calc. chlorid., 8 ozs.

Bath No. 3. Sod. chlorid., 6 lbs. ; calc. chlorid., 10 ozs. ; sod. bicarb., 6 ozs. ; acid. hydrochlor., 7 ozs.

Bath No. 4. Sod. chlorid., 7 lbs. ; calc. chlorid., 10 ozs. ; sod. bicarb., 8 ozs. ; acid. hydrochlorid., 12 ozs.

Bath No. 5. Sod. chlorid., 9 lbs. ; calc. chlorid., 11 ozs. ; sod. bicarb., 1 lb. ; acid. hydrochlor., 1½ lbs.

Bath No. 6. Sod. chlorid., 11 lbs. ; calc. chlorid., 12 ozs. ; sod. bicarb., 1½ lbs. ; acid. hydrochlor., 2½ lbs.

I have been using only the first four of these baths, which are probably those most likely to be employed commonly, and find no difficulty in arranging them in our hospital bath room. A porcelain bath is of course likely to suffer less from the effects of the chemical constituents, but so far our metal baths do not show any indication of being injured.

THE EXERCISES.

The exercises are called by Dr. Schott "*Widerstandsgymnastik*," or resistance gymnastics, and consist in slow movements executed by the patient and resisted by the physician or operator. A short interval is allowed after each movement, during which the patient sits down. The exertion employed must be very small, and should cause no increase in respiratory movements, flushing, or pallor. The patient should be loosely and lightly clothed, and instructed to breathe quietly. The resistance made should be of such a kind that the patient may always feel himself easily the master. The operator must not grasp or in any way constrict the limb, but should oppose by the hand held flatly. The movements are nineteen in number :—

1. Arms extended in front of body on a level with shoulder, hands meeting; arms carried out until in line, and brought back to original position.

2. Arms hanging at sides, palms forwards; arm flexed at elbow until tips of fingers touch shoulder, back to original position; one arm only moved at a time.

3. Arms down, palms forward, arms carried outwards and upwards until thumbs meet over head; back to original position.

4. Hands in front of abdomen, fingers flexed so that second phalanges touch those of opposite hand; arms raised until hands rest on top of head; back to original position.

5. Arms down, palms against thighs, arms raised in parallel planes as high as possible; back to original position.

6. Trunk flexed on hips; return to original position.

7. Trunk rotated to left, to right; return to original position.

8. Trunk flexed laterally.

9. As No. 1, but fists clenched.

10. As No. 2, but fists clenched.

11. Arms down, palms against thighs, each in turn raised forwards and upwards until arm is alongside of ear, then turned outward, and arm descends backwards.

12. Arms down, palms to thighs, both together moved backwards in parallel planes as far as possible without bending the trunk forwards.

13. Thighs in turn flexed on trunk, opposite hand resting on chair.

14. Lower extremities in turn extended fully, and bent on trunk forwards and backwards to extreme limits of movement, opposite hand resting on chair.

15. Legs in turn flexed on thigh, both hands on chair.

16. Feet together, lower extremities in turn abducted as far as possible, and brought back to original position, opposite hand on chair.

17. The arms, extended horizontally outwards, are rotated from the shoulder-joint to the extreme limits forwards and backwards.

18. The hands in turn are extended and flexed on the forearm to extreme limits, and brought back in line with arm.

19. The feet in turn are flexed and extended to extreme limits, and then brought back to their natural position.

These exercises are easily learnt, and nurses make very good operators, as they do not resist too much. I found difficulty in making my resistance sufficiently weak, and I should be afraid that this would stand in the way of training male operators generally; at any rate they would need careful selection.

The effects of the exercises are the same as those of the baths—namely, the area of cardiac dulness is reduced, while the pulse becomes slower and stronger. It is very difficult to get trustworthy sphygmographic evidence of the effects of the baths and exercises, as the adjustment of the instrument affects the result so greatly that two tracings taken at different times are only roughly comparable.

It is not to be expected, and certainly not to be desired, that the changes in the pulse should be very marked, and consequently the minute characters of the tracing become important. Dr. Stacey Wilson is familiar with his own pulse tracing, and kindly allowed some continuous sphygmograms to be taken before, during, and after a simple resisted movement. He has calculated the averages for the two experiments as follow:—

Experiment I., October 5th:

		Ampli- tude.		Tidal Wave.		Dicrotic Notch.		Dicrotic Wave.
Before movements	...	13'0	...	5'0	...	3'0	...	5'0
During ,,	...	14'4	...	5'3	...	3'4	...	5'4
After ,,	...	15'4	...	5'6	...	4'0	...	5'7

Experiment II., October 7th:

Before movements	...	17'0	...	8'0	...	5'5	...	7'0
During ,,	...	17'7	...	9'3	...	6'2	...	8'0
After ,,	...	17'3	...	8'75	...	5'8	...	7'6

These figures show that the amplitude of the pulse and its tension and force, so far as these are indicated by the sphygmograph, were all increased during the movements, and immediately afterwards.

I have carried out the treatment by baths and exercises for the last three or four weeks on several patients in the General Hospital.

Case 1.—The first is a case of Graves's disease associated with glycosuria. His pulse is always rapid, and often very irregular. The exercises were begun on September 9th, but were stopped on October 2nd, as his pulse was very seldom slowed after them, and its general condition was not at all improved. He has had baths up to No. 4, and these up to the present have had no permanent effect on his pulse. This shows the immediate effect of a bath on his pulse rate :

Before bath	108	per minute.
1st minute	103	"
2nd "	103	"
3rd "	102	"
4th "	109	"
5th "	104	"
6th "	106	"
7th "	104	"
8th "	103	"

Ten minutes after 106 per minute.

The pulse was irregular at first, but became quite regular and of much higher tension. We shall continue the baths for a time, as he likes them, but their effect on the progress of the disease is doubtful.

Case 2 is a boy with a dilated heart and mitral disease. In the course of treatment he developed symptoms suggestive of slight pericarditis, for which the baths and exercises had to be omitted for some days. Hence the case has not been a very fair one. The bath and movements have generally slowed his pulse, and in the bath there was considerable reduction of the area of cardiac dulness in all diameters.

Case 3 was also a boy with valvular disease and a dilated heart. His temperature was not very steady on admission, and became so irregular that the treatment was stopped and will only be resumed when he improves.

Case 4 is a boy with mitral disease and a dilated heart. He has only been under treatment about a fortnight, so that it is too soon to speak of results, but he is going on well

Case 5 is another boy with mitral disease and a dilated heart under the care of Dr. Wilson. He is a very suitable case, as he has no recent acute trouble of any kind, while the other three have each had recently more or less rheumatism. The movements and bath slow his pulse, and in the bath the heart's area and position altered as shown in the diagram. As can be seen the area contracted very much, but the apex tilted up and beat outside the nipple line in the fourth inter-space. Was this due to rotation of the heart or to contraction of the right side, so as to bring up to the front the left ventricle, which had been previously pushed away from the wall of the chest? The boy has improved, as Dr. Wilson will tell you.

CASES FOR WHICH THE SYSTEM IS SUITABLE.

The system is claimed by Dr. Schott to be of special value in all cases of chronic heart disease except where there is advanced degeneration of the myocardium, or aneurism of the heart or great vessels, or advanced arterio-sclerosis. It has proved of great service in all forms of valvular disease, in congenital cardiac defects, in simple dilated hearts without valvular disease, in the functional cardiac debility of anæmia, however induced, in nervous irritable hearts, in simple tachycardia, and in the rapid heart of Graves's disease. Dr. Thorne is led, partly by theoretical considerations, partly, no doubt, by experience, to speak hopefully of its prospects in the early stages of arterio-sclerosis and aneurism, but I shall have occasion to show that his theoretical grounds are not altogether indisputable; and although the method, if cautiously employed, may do no harm, and may even strengthen the heart, it is not likely to do any good to these conditions and may prove disastrous; therefore I think it wiser to advise that Dr. Schott's limitations should be regarded as the rule in practice.

RATIONALE OF THE SYSTEM.

The theory adopted by Dr. Schott and which he stoutly maintained in Dr. Bezly Thorne's presence, is that the baths and the exercises act upon the heart through the nervous system by

evoking a reflex influence which stimulates the action of the cardio-inhibitory or regulator nerves, thus slowing and strengthening the pulse; and though some of his friends in England take a different view, he told me he adheres to this explanation. Dr. Bezly Thorne, on the other hand, believes the baths and exercises alike favour the circulation by dilating first the muscular arteries and afterwards those of the skin, and thus relieve the heart from backward pressure. This view is supported by Sir William Broadbent and by his son, Dr. John Broadbent. The theory of Dr. Thorne is not consistent with the pulse tracings and manometric observations of Dr. Schott, nor with the physiological law that the heart beats very inversely with the blood pressure.

If the effect of the baths and exercise be to diminish the blood pressure, the heart's action—following Marey's law—should be quickened; but all are agreed that the pulse is slowed. Sir William Broadbent recognises this difficulty, and endeavours to avoid it by retaining Dr. Schott's hypothesis of a reflex nervous effect on the heart as a second string to his bow. He says; "It is not by any means denied that this (that is, reflex nervous influence) plays some part in the process, more particularly as diminished peripheral resistance has been shown experimentally to accelerate the action of the heart, whereas it is here accompanied by diminished frequency of the pulse. My observations, however, have led me to the conclusion that the primary and principal effect is on the peripheral circulation." It seems to me that before coming to this conclusion Sir William Broadbent could hardly have had his attention directed to the pulse tracings and measurements of pulse pressure published by Dr. Schott and republished by Dr. Bezly Thorne, or he must have overlooked them. So far as my tracings go they agree with Dr. Schott's, and at least some opposing evidence of the same kind should be advanced by those who differ from him.

Dr. Thorne supports his theory by quoting from Dr. Lauder Brunton's Harveian oration of last year. In that address Dr. Brunton drew attention to some experiments of Ludwig, which

show that when under the influence of stimulation of the vaso-motor centre, the arterioles of the skin and intestine contract, the blood accumulates in the muscles, and the tendency of the blood pressure to rise is partly counteracted. But this certainly does not justify the conclusion that no rise takes place, which would be opposed to very common experience. Further, Dr. Brunton endeavours to show that during muscular exercise a similar transfer of blood to the muscles takes place, and acts in the same way. But he does not show that such transfer has the effect of doing more than counteracting the tendency to raise the blood pressure. Indeed, in another place he says, "Muscular exercise, therefore, has a special tendency to raise the blood pressure in the arterial system, and consequently to increase the resistance which the left ventricle has to overcome." This tendency may be moderated by the means he has suggested, but is it not going too far to claim that the blood pressure is thereby actually lowered? If such a fall takes place, it should be assigned to diminution in the force of the heart from fatigue, such as of course may occur after over-exertion, but of that there is at present no question.

The tracings and measurements we have made all show that the effects of the baths and exercises are to slow the heart and raise the blood pressure. If that be so, no explanation can be accepted which is inconsistent with the evidence. But I must guard myself against being supposed to support Dr. Schott's theory. I agree with Sir William Broadbent that the principal and primary effect of the baths and exercises is on the peripheral circulation, but that effect is to raise the blood pressure, and the heart becomes slower in accordance with Marey's law. The beneficial results of the Schott system depend, in my opinion, upon the very careful and easily regulated method by which the extra work is imposed upon the muscular wall of the heart, which is thereby developed and strengthened, as any other muscle is developed and strengthened by systematic graduated exercises and not by any hypothetical reflex nervous effect upon the heart.

This view seems to be terribly alarming to some of the advocates of the Schott system, apparently because it suggests that the method might be dangerous under certain conditions. But if there is no danger, why does Dr. Schott object to its use in grave myocarditis, aneurisms, and advanced arterio-sclerosis? If it only regulates the heart's action it can do harm, but it does more than that, it raises the blood pressure, increases the tension of the walls of the heart and arteries, and where myocarditis is very advanced or the vessels are ready to give way from disease of their walls, it may produce disaster.

I see only good from the recognition of these limitations to the system, and I consider that a sound estimate of the mechanism involved will tend to prevent its indiscriminate use, while the success which has attended the practice of Dr. Schott and his followers assures us that, followed out on his lines and within the limits he has laid down, it possesses no dangers which should deter us from recommending its use to our patients in suitable cases.

MOUNTAIN CLIMBING.

It is the practice at Nauheim to supplement the cure by sending people to climb gradients at one of the higher health resorts in the Taunus, Black Forest, or Switzerland. This exercise, which is known to be not without danger, may be safe enough for hearts which have been already strengthened by the graduated Nauheim system; it was long ago advocated by Dr. Stokes, though it is generally associated with the name of its more recent advocate, Professor Oertel, of Munich.

Stokes, speaking of the treatment of fatty heart, says:—"We must train the patient gradually but steadily to the giving up of all luxurious habits. He must adopt early hours, and pursue a system of graduated muscular exercise; and it will often happen that after perseverance in this system the patient will be enabled to take an amount of exercise with pleasure and advantage which at first was totally impossible, owing to the difficulty of breathing which followed exertion. This treatment of muscular

exercise is obviously more proper in younger persons than in those advanced in life. The symptoms of debility of the heart are often removable by a regulated course of gymnastics, or by pedestrian exercises, even in mountainous countries such as Switzerland, or in the Highlands of Scotland or Ireland. We may often observe in such persons the occurrence of what is commonly known as "getting the second wind," that is to say, during the first period of the day the patient suffers from dyspnœa and palpitation to an extreme degree, but by persevering, without over-exertion, or after a short rest, he can finish his day's work, and even ascend high mountains with facility." He adds in a footnote that he has seen the most beneficial effects on the weakened hearts of young men "in persons who had spent the summer walking through the Alps, when during exercise they were under constant perspiration." He concludes his remarks by urging caution in advanced life, where the disease of the heart is frequently complicated by atheroma of the aorta and affections of the liver and lungs.

Oertel, whose writings on the treatment of diseases of the circulation evince great breadth of view and a desire to grasp the fundamental principles involved, believes that the damaged heart suffers most from the excess of fluids in the body, owing to diminution in the secretion of the kidneys and the sweat glands; and this source of oppression is increased when obesity is also present. His system therefore aims first at reducing the amount of fluid, then in regulating the amount when this diminution has been secured. To do this he seeks to increase the action of the skin, lungs, and kidneys, while limiting the amount of fluid ingested; but he admits that it is difficult by drugs to stimulate these organs efficiently, and he therefore recommends increased muscular activity by long walks, ascents—in short, by mountain climbing—which leads to increased water excretion from the skin and lungs. He also speaks well of Turkish baths, vapour baths, and hot packs. With these means he gives an albuminous diet (eggs), and restricts the amount of fluid taken to about half a litre (15 oz.) daily.

It is apparent that both Stokes and Oertel regard mountain climbing rather as a means of eliminating water than as directly aiding the heart, either by reflex inhibition, lowering vascular tension, or by exercising the heart, and so causing it, like any other muscle, to wax stronger by use. This last view certainly seems the most reasonable, and it is, as I understand, on this principle that Dr. Schott recommends it for suitable cases. He has quite abandoned Oertel's dietary, except where the heart condition is complicated by obesity, when he employs it in a modified form.

CONCLUSION.

A system like Dr. Schott's, which has been slowly evolved and perfected by years of careful clinical work, comes to us claiming attention chiefly from its practical results, and is, in my opinion, in no way discredited by any differences or doubts as to the proper theory upon which it is based. The latter only becomes important when new developments of the system are started, based on doubtful theories and lacking the support of his long experience.

I hope you will allow me to express my strong sense of the danger there is of checking the fair trial of this promising method by the hasty extension of it to cases forbidden by Dr. Schott, and against which he especially warns us. Worked carefully and conscientiously on the lines laid down by its originator it seems capable of being usefully introduced into our hospitals, into private practice, and especially into the practice of physicians at watering-places like Droitwich and Buxton, where many cardiac patients go annually for the treatment of their rheumatic and gouty ailments.

The system is fully at work at Llangammarch; Mr. Armstrong, of Buxton, has been pursuing it for the last two years at Buxton, where he has arranged very good baths in a hydropathic establishment, and has nurses trained to conduct the exercises. I believe it is also carried out at Sidmouth, and I hope Dr. Roden will be

able very shortly to give a fair trial to the Schott method in conjunction with the brine baths of Droitwich, modified to correspond with those of Nauheim.

We who have not the advantage of practising at health resorts know the drawbacks which attend any attempt to carry out systematic treatment on patients who are not detached from their business or domestic cares, or their ordinary pursuits and pleasures, and for this reason its introduction into family practice will be limited. But in hospitals, where the patients are completely under control, I trust a fair trial may be given to it, for it is of importance that we should accumulate a wider experience than we already possess before we can say more than that it offers a fair prospect of success. There is one large group of cases in which private practitioners may be able to apply this treatment with advantage. I refer to the numerous cases of weakened heart after acute diseases: acute rheumatism, scarlatina, influenza, etc., which at present are allowed to take their chance of strengthening under the not always satisfactory plan of ordinary walking exercise, the regulation of which is left very much to the patient's feelings and temperament. If, before any ordinary exercise were allowed, a course of Schott treatment could be carried out, it seems reasonable to hope that the heart would be better prepared to endure the less easily regulated strain of walking.

From my small experience I would suggest that the effect of the baths should be tried first, and that afterwards when the exercises are introduced their influence upon the pulse-rate and tension should be carefully watched, as they do not always suit irritable, nervous hearts. Dr. Sturges's case is an instance in point, and the patient in the General Hospital with Graves's disease, whose heart slowed and improved in the bath, was not benefited by the exercises—that is, the pulse was not slower or improved in character or rhythm.

BIBLIOGRAPHY.

- Armstrong, W. The Nauheim Treatment of Chronic Cardiac and Allied Diseases. *Liverpool Medico-Chirurgical Journal*. July. 1895.
- Beneke, F. W. Zur Therapie des Gelenkrheumatismus und der damit verbundenen Herzkrankheiten. 1872.
- Broadbent, J. F. H. On Treatment of Chronic Heart Disease by the Methods of Dr. Schott of Nauheim. *The Practitioner*. 1895. Vol. i., p. 385.
- Broadbent, W. Some Remarks on the Mode of Action of the Treatment and its Indications. *Ibid*, p. 394.
- Brunton, T. Lauder. The Harveian Oration. 1894. London. 1894.
- Campbell, H. The Mechanical Treatment of Heart Disease. *British Medical Journal*, 1894. Vol. ii., p. 1101.
- Eccles, A. Symons. Mechano-therapy in Chronic Diseases of the Heart. *The Practitioner*, 1894. Vol. i., p. 107.
- Leichtenstern, O. General Balneotherapeutics. Ziemssen's Handbook of Therapeutics. Vol. iv., p. 295. London. 1885.
- Oertel, M. J. Therapeutics of Circulatory Derangements. *Ibid.*, Vol. vii. 1887.
- Schott, A. Die Bedeutung der Gymnastik für Diagnose, Prognose, und Therapie der Herzkrankheiten. *Zeitschr. für Therapie*. 1885.
- Schott, Th. Herzkrankheiten. Sep. Abd. a. d. *Real Encyclopädie der gesammten Heilkunde*. Wien und Leipzig. 1890.
- Schott, Th. The Treatment of Chronic Diseases of the Heart by Means of Baths and Gymnastics. *The Lancet*, 1891, vol. i., p. 1,143.
- Schott, Th. The Mineral Waters of Nauheim : their Actions, Uses and Effects. London. 1894.
- Smyly, P. C. On the Treatment of Enlarged Heart by Certain Movements, as taught by Dr. Th. Schott, of Bad Nauheim. *Dublin Jour. of Med. Sci.*, 1894, vol. ii., p. 185.
- Stokes, William. The Diseases of the Heart and Aorta. Dublin. 1854. p. 357.
- Sturge, W. Allen. Note on the Treatment of Dilated Heart, as Practised at Nauheim. *Brit. Med. Jour.*, 1895, vol. i., p. 527.
- Thorne, W. Bezly. The Treatment of Chronic Diseases of the Heart by Baths and Exercises, according to the Method of Dr. Schott. *The Lancet*, 1894. vol. i., p. 1,117.
- Thorne, W. Bezly. The Treatment of Chronic Affections of the Heart by Baths and Exercises. *Brit. Med. Jour.*, 1895, vol. i., p. 524.
- Thorne, W. Bezly. The Schott Method of Treatment in Chronic Diseases of the Heart. London. 1895.
- Wethered, F. J. The Treatment of Chronic Diseases of the Heart by Baths and Gymnastics, as Practised at Nauheim. *Brit. Med. Jour.*, 1894, vol. ii., p. 1,045.

REPORTS OF CASES.

THREE CASES OF PNEUMONIA.

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In view of the recent threatenings of a renewal of the influenza epidemics of former years, the three following cases have appeared to me to be of some interest. They have all come under my notice in the course of the last twelve days (November 19th).

1. C. S., aged 27, came to the out-patient department of the General Hospital on the morning of November 7th, 1895, giving a history of eight days' illness. He had not been in good health for some time, although he had nothing definite to complain of, but was in his usual condition on the morning of October 29th; when he was taken ill, whilst at work, with pains in the chest and all over the body, and was obliged to go home and get to bed. His illness had continued until the time of his visit to the hospital; but, although he had been "light-headed" at night, according to the account of his landlady, his illness had not been sufficiently severe to oblige him to keep entirely in bed, or to prevent him from walking up to the hospital without any very serious amount of distress. On arrival in the out-patient room, he looked extremely ill. His face had a pinched expression and his eyes were sunken, and surrounded by dark rings. His respirations were 30 and his pulse 120, but the amount of dyspnoea was not excessive. His temperature was normal at that time, though in the ward it subsequently rose to 100·2°. On examination, there was marked dulness at the right base, with numerous crepitations and bronchial breathing; there was some diffused bronchitis throughout the lungs. He was admitted as an in-patient, and has since steadily recovered. The temperature rose the first

night to 101°, and remained a little irregular during the next few days ; but there was nothing resembling a critical drop.

2. R. O'D., aged 45, came to my out-patients on November 14th complaining of shortness of breath, a bad cough, and general illness of seven days' duration. He had been liable to attacks of bronchitis for many years, and had had a chronic cough for some time ; but was in his usual health until November 8th, when he was somewhat suddenly taken with pains all over, most marked in the right side of the chest, and general illness. He continued at work until November 13th, when he was obliged to go home and keep in bed. The next day, on arrival at the hospital, whither he had walked, though only a short distance, he was short of breath, and his face was cyanosed and pinched ; but his movements were vigorous and seemed to cause him no severe distress. His breathing was suggestive of bronchitis rather than of pneumonia, being accompanied by a good deal of wheezing. His pulse was 130 and very feeble ; the temperature was normal. On examination, there was abundant evidence of old chronic lung mischief in the shape of emphysema, and rhonchi were heard over the whole chest ; but at the right base there was dulness, with numerous sharp crepitations, and bronchial breathing. He was treated with digitalis, small doses of iodide of potassium, and ammonia, and told to keep in bed and to come up again in two days' time. (He lived within a stone's-throw of the hospital.) On November 16th he presented himself in a much improved condition ; the cyanosis had disappeared together with the rhonchi, and the consolidation showed signs of clearing up. To-day (November 19th) I have again seen him, and his progress has continued to be satisfactory. I may add that he refused to stay in the hospital as an in-patient.

3. C. R., aged 50, came to the hospital on November 16th complaining of pains in the back and some general weakness of eight days' duration. He also had been in good health up to that time, but had been during the week sufficiently ill to be obliged to keep in bed. On examination, there was a small

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area of consolidation at the left base ; but his case differed from those previously described by the slight degree of the general illness. The temperature was normal, and there was nothing to suggest (beyond a somewhat rapid and feeble pulse) that he had been seriously ill. The apex beat was displaced outside the nipple line ; but the urine was plentiful and light-coloured, and contained a haze of albumen. I have not yet seen him a second time.

Considering the general condition of the two former patients, I find it difficult to believe that they were suffering from an ordinary attack of acute lobar pneumonia, though the first certainly came nearest to a condition corresponding to that which one would have expected from such a diagnosis. The comparatively slight amount of distress, especially on movement, was very noticeable. In the case of the third, it was certainly out of the question to make any such diagnosis. The cases, as a whole, reminded me strongly of those of which I used to see so many at the times of the former influenza epidemics, when cases of diffused bronchitis with some consolidation at one base were, according to my experience, by no means uncommon. The alternative, at all events in the two latter cases, seems to be that there had been some amount of chronic basal mischief on which some acute trouble had supervened. I cannot, however, help being somewhat impressed with the occurrence of these three cases at the present time, when some threatenings of a return of the enemy are making themselves heard ; especially as I cannot remember having seen any similar cases in my out-patient practice for a long time.

TWO CASES OF ACUTE INTESTINAL OBSTRUCTION.

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Case 1. A married woman, aged 35, came under my care at the General Hospital on February 6th, 1895, suffering from severe abdominal pain accompanied by vomiting and abdominal distension. Her illness dated back to a fall eleven days previously, when she slipped and fell in a sitting posture, shaking herself very considerably. She did not feel much the worse at the time; but towards evening she began to have cramp-like pains in the lower part of the abdomen, and these got so much worse next day that she had to leave off work at noon and go home. The pain continued to increase during the next few days, and was accompanied by persistent vomiting. The situation of the pain varied, being at first in the region of the cæcum and then more in the centre of the lower part of the abdomen. Constipation does not appear to have been a prominent symptom of the earlier part of her illness, for the bowels were moved with fair regularity considering the small amount of nourishment which she was able to retain. She got worse up to the time of admission.

When first seen, the face was decidedly pinched and the eyes were sunken, but there was not much collapse. The tongue was dry in the centre, the pulse small and rapid, and the temperature a degree above normal. The abdomen was found to be much distended, especially on the left side at and below the level of the umbilicus. The walls were tense and hard except in the right lateral region, but the rigidity was not sufficiently marked to suggest the onset of peritonitis. The tenderness was more or less general over the centre, lower part, and left lateral area of the abdomen, and its point of maximum intensity was at or just below and to the left of the umbilicus. On percussion, the abdomen was resonant throughout, and the prominent portion especially so. On examining this area by percussion

combined with auscultation, it was found that a well-defined area could be localised occupying a considerable portion of the left side of the abdomen, over which the same note was audible and over which the "bell sound" produced by two coins was also audible. These facts seemed to show that the prominence was due to a single air-containing viscus, and not to distended coils of small intestine. The absence of vermicular contractions also pointed to the same conclusion. Further examination seemed to point towards this cavity being the stomach, for when the coin was laid on the tumour and struck, the bell sound could be heard over the normal gastric area; or when struck over the gastric area, it could be clearly heard over the abdominal prominence. The abdominal area above spoken of was bounded on the left by the line of the anterior superior spine of the ilium, which it almost reached, below by a curved line extending from the centre of Poupart's ligament to the middle line of the body, at a spot rather more than half way from the umbilicus to the pubes. Its right boundary was slightly to the right of the middle line. Between this rounded area—over which the bell sound was audible—and the stomach there was a horizontal band, about an inch and a half wide, just above the umbilicus where the bell sound was not heard when the coin was struck over the prominent area or over the stomach; and, conversely, when the coin was laid here, the bell sound was not heard at all clearly over either tumour or stomach. Also when the patient drank water, ringing metallic bubblings were heard, not only over the gastric area, but also over the prominent area above described. Elsewhere in the abdomen the sounds were not heard with anything like the same clearness.

The passage of a soft œsophageal tube for the purpose of washing out the stomach showed that that organ was not materially dilated, and it was therefore probable that the large air-containing space lower down in the abdomen was the descending colon so much distended with gas as to press upon the stomach in a manner to make the two cavities acoustically

continuous and behave like one cavity. This explanation was further upheld by the existence of the narrow band above mentioned which gave a negative result when tested for the bell sound. This would be due to small intestine lying over the colon at its upper part. The distension of the colon must have been very considerable for the air-containing cavity had a transverse diameter of at least five inches.

On seeking a cause for this distension evidence was found of a tumour high up between the rectum and the uterus, fixing the latter organ to the sacrum, and so surrounding the rectum as to constrict its lumen. The rectal examination showed the rectum to be roomy with crescentic folds across its anterior wall; the lowest one was about an inch above the sphincter ani and the highest one about three inches above it. This fold was a very prominent one and shut off a sort of pouch from the rest of the rectum. On the anterior and upper wall of this pouch the opening of the upper part of the rectum could just be made out, surrounded by dense tissue and so narrowed as only to admit the tip of a finger. It was moreover fixed to the sacrum by the dense tissue. There were no well-defined margins to this hard mass as felt from the rectum, and both laterally and posteriorly it seemed more to resemble an inflammatory infiltration than a localised tumour starting in the bowel. On making a combined recto-vaginal examination the tumour was felt to be distinctly rounded at its anterior and lower part where it projected down between the rectum and vagina. The fundus uteri was drawn back and fixed to the sacrum by the above-described hard mass.

No further information could be gained on bimanual examination, for neither the uterus nor the mass behind it could be felt from above. There was no evidence of involvement of the bladder beyond an occasional slight difficulty in micturition.

The patient was treated by rest in bed, hot fomentations to the abdomen, as little food as possible by the mouth, and Tinct. Belladonnæ in ten minim doses with carminatives every four hours. The vomiting ceased the day after admission and

the abdominal pain became much less, although the bowels were not moved till she had been in the hospital a week. During this time she had only had one ounce of milk per hour by the mouth and nutritive enemata of peptonized raw meat every four hours.

On the fourth day after admission the abdominal pain, tenderness, and distension had all materially lessened, and very slow peristaltic movement could be seen passing down the tumour from the umbilicus towards Poupart's ligament. Owing to the absence of tenderness gentle pressure was applied over the prominence in a manner to assist natural peristalsis, and the patient was instructed to do this herself. The next day flatus was passed, and the day following the bowels were moved for the first time since admission. By this time the prominence had materially diminished, and the remainder of the abdomen was quite lax and normal.

The question as to the nature of this tumour had next to be decided, and whether any operation should be performed in order to guard against a possible recurrence of the obstruction with its attendant risk to life.

If the tumour were a malignant one an operation would be clearly desirable, for the stricture would be certain to become progressively narrower and another attack of obstruction would be extremely probable in a very short time.

In favour of the non-malignant character of the stricture was the fact that the patient had had more or less trouble and discomfort from what she called "a coming down of the womb" since her last child was born seven or eight years ago, at which time she had to have instruments used and was ill subsequently for several weeks. Again, the very great distension of the descending colon above the stricture and the hypertrophy of its muscular coat, as evidenced by the visible peristalsis, pointed to a stricture of long duration. The situation and the ill-defined margins of the tumour were quite compatible with its being of inflammatory origin and originating in connection with the uterine appendages. The condition of the patient and absence of marked cachexia did not point to advanced malignant disease.

After a thorough examination of the patient under chloroform, in consultation with other members of the Hospital Staff, it was decided that no operation was called for, as there was no evidence against the case being one of pelvic inflammation. The patient was accordingly treated by hot vaginal douches three times a day and a glycerine plug, with the result that improvement was steadily continued, and she was sent to a sanatorium, after seven weeks in hospital, very much improved in every way.

Remarks.—The cause of the obstruction in this case is specially interesting. The shock of the fall seems to have caused fresh inflammation at the seat of the old pelvic inflammation, or else, possibly, a hæmorrhagic effusion at this spot; and the increased pressure thus arising was sufficient to occlude the rectum where it passed through the inflamed area. This is rendered the more likely by the fact that the fall occurred at the menstrual period, menstruation commencing the day after the fall and lasting a couple of days. One other explanation seemed possible from the history of the case, and that was, that the fall had altered the position of the inflammatory tumour in such a way that it pressed on the rectum. Against this were the facts of the fixation of the tumour to the sacrum and of its surrounding the rectum, and also that it was not possible to move the tumour in the least by pressure applied from the vagina. Another point of special interest and significance in this case was the fact that the “bell sound” could be obtained over the combined area occupied by the stomach and distended descending colon and sigmoid flexure of the rectum, thus giving rise to the impression that the whole of the left half of the abdomen, from the level of the left nipple nearly to the pubes, was one air-containing cavity.

Case 2. This patient, a young woman aged 20, was admitted to the General Hospital, on October 15th of this year, suffering from very acute abdominal pain, vomiting, and collapse. She had been ill for many years with chronic pneumonia, probably of a tubercular nature, and suffered last year from peritonitis,

also supposed to be tubercular. Since then^s she has had an attack of acute obstruction of the bowels with great abdominal pain, similar to the attack we are now about to describe.

The night before admission, at about twelve o'clock, she was suddenly seized with severe vomiting and diarrhœa, accompanied by rigors. The vomit at first consisted of a large amount of partially digested food. The motions were loose, yellow, and copious, and she suffered acute abdominal pain. All her symptoms increased in severity through the night with the exception of the diarrhœa, which ceased after a few hours.

When admitted to hospital the following morning she looked very ill. Pulse was small and compressible, 140 per minute; respiration 24. temperature normal. The tongue was dry and rather brown. She lay with her legs drawn up, and was quite hysterical in consequence of the abdominal pain. She also had cramp in her legs. On examining the abdomen, there was marked prominence of the lower half below the umbilicus. This was found to be tense on palpation, and evidently consisted of distended small intestine, as the coils could be plainly felt to the left of the middle line. To the right of the middle line the individual coils could not be distinguished, and the abdomen was much duller on percussion. Although the abdomen was much distended and tender, and the pain severe and shooting round to the back, it was probable, from the absence of muscular rigidity and hardness in the abdominal walls, that peritonitis had not yet set in. Owing to the distension and tenderness, nothing more definite could be made out by palpation; but, from the history, it seemed probable that obstruction had occurred at a place where the small intestine was bound down or its coils matted together by adhesions resulting from the attacks of peritonitis she had a year ago. Under these circumstances it was decided that an operation was not called for, and palliative remedies were used. A hypodermic injection of morphia was given to quiet her with good effect, although it was evident that hysteria was playing a considerable part in the outcry that she was making.

With a view of checking the violent spasmodic efforts of the small intestine to overcome the obstruction, a large "Leiter's coil," consisting of indiarubber tubing through which ice-cold water was circulating, was applied to the abdomen, and extract of belladonna in half-grain doses was given every three hours. Nothing whatever was given by the mouth for the first twelve hours, and nourishment was given by means of enemata only. These measures had the desired effect, and the patient passed a quiet night although she once or twice vomited some watery material smelling strongly of sulphuretted hydrogen, in all about thirty ounces. Next day she was much better and the abdomen less distended, and although there was still a good deal of spasmodic contraction of the distended intestines, they were almost painless. The pulse was still small and rapid and the tongue very dry, but cleaner.

On the following day the spasm and distension of the small intestines was much less, and in the afternoon there was a copious motion in response to a simple enema, the stool being very dark and bile-stained, and containing some hardish masses and a quantity of bits of apple skin. During the night the bowels were moved three times and in the following twenty-four hours ten times; the majority of the earlier stools being of the same bile-stained and watery character, but the later ones, though still liquid, were lighter in colour.

On the following day the ice coil was stopped, and feeding by the mouth, which had been commenced as soon as the bowels acted, was allowed to take the place of the nutrient enemata.

From this time the patient rapidly improved and had no more abdominal pain. When the distension of the lower part of the abdomen subsided it was possible to make out a rounded mass about the size of a man's thumb occupying the position of the lowest portion of the ileum—evidently a portion of intestine matted together by adhesions or surrounded by inflammatory deposit. The surrounding intestine could frequently be felt to harden, and then the smaller tumour would be lost in a well-marked but not sharply-defined tumour of the size of a small orange. Borborygmi would usually accompany these contractions.

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The sequence of events in this case was evidently as follows :— First an acute gastric intestinal catarrh from a chill or error of diet accompanied by severe diarrhœa. Then the weight of the distended small intestine above the narrowed or fixed part of the gut was sufficient to occlude this portion either by kinking just above the point of narrowing or else by direct pressure. When once this had occurred the spasmodic contractions which resulted only made matters worse by increasing the pressure, as is usual in such cases. It was not until the spasm of the gut was lessened by the measures employed that the intestinal contents were able to pass along their usual channel through the narrowed portion of gut.

HISTORY OF CASE—"KOCH" TREATMENT.

Before leaving this case I think that the history of this patient's previous illnesses is sufficiently varied and interesting to merit a few remarks.

This patient's illness really dates back to an attack of pneumonia, for which she was admitted to hospital in May, 1890. On this occasion she was in the General Hospital for four months suffering apparently from chronic pneumonia of both lungs, with occasional attacks of acute pleurisy ; and all the first part of the time that she was in the hospital there was irregular and often very considerable pyrexia, the temperature occasionally reaching 105° F. She afterwards spent some time at the Jaffray Hospital, and was discharged much relieved, but only to be readmitted again in April of the following year with severe general bronchitis and chronic broncho-pneumonia. The chest was very full of moist râles, and there was a good deal of muco-purulent sputum, but careful search failed to show the presence of tubercle bacilli. The pyrexia during the five weeks she was in hospital was very considerable ; the temperature was rarely below 100°, and often reached 104 ; it averaged about 101·5, and, if anything, it increased towards the end of her stay in the hospital. The pulse was about 120, and the respirations 24-30 per minute. In this condition she was

transferred to the Jaffray Suburban Hospital, and there underwent a course of treatment by small injections of Koch's original tuberculin with most beneficial results.

During the first month at the Jaffray Hospital, before the injections were commenced, she made no progress in any way; she had lost weight, and was only 4 st. 9½ lbs. although 16 years of age. Both lungs were full of medium and coarse crackling râles, and there was consolidation of the left apex with some evidence of a cavity there. She suffered from night-sweats. The temperature was not quite so high as on admission, averaging about 100° F. Tuberculin was now injected twice or thrice a week in slowly increased doses for the next fourteen weeks, the doses ranging from '0002 at the commencement to '003 at the end of the treatment. By this time the temperature was always sub-normal, and the lungs were normal except for the slight impairment of the percussion note at the left apex and left lateral base. The patient had moreover gained two stone in weight in the fourteen weeks. There was marked improvement after even the first four weeks of this treatment, for the temperature had come down to normal, and the lungs were almost free from moist sounds, the pneumonic or phthisical patch at the left apex having nearly cleared up. The patient had moreover gained a stone in weight. This rapid and all-round improvement in four weeks was most striking, considering that she had been under treatment at the General Hospital and Jaffray Hospital for nine weeks prior to the commencement of the tuberculin with but very little improvement.

The patient remained in the Jaffray Hospital till Oct. 23rd, and was discharged cured, having risen in weight from 4 st. 9¼ lbs. on June 12th to 7 st. 2½ lbs. on October 22nd, a gain of 2 st. 9¼ lbs. in the four months, *i.e.*, an increase of her weight by nearly 57 per cent. in this short space of time. Her appearance was most striking, for instead of being an emaciated girl, she had in these few months developed into a stout and well-nourished young woman. During the ensuing eight months

hard work and scanty food caused a recurrence of her illness, and she had to be readmitted into hospital in June, 1892, much emaciated, having lost $1\frac{1}{2}$ st. in weight, and with her lungs in a bad state. She again rapidly improved in hospital, and was discharged practically well after seven weeks' treatment.

In January, 1894, she was again admitted to the General Hospital, coming under the care of Dr. Rickards. On this occasion her chest condition was fairly satisfactory, but she was suffering from sub-acute peritonitis with pyrexia, which was diagnosed to be of tubercular origin; and shortly afterwards she was treated in the Queen's Hospital for nine weeks, by Dr. Foxwell, for tubercular peritonitis. After her discharge from the Queen's Hospital she continued well and at work for twelve months, and then had a severe attack of intestinal obstruction similar to the one for which she is now again a patient in the General Hospital. This occurred in August of this year, and her condition was so severe that at one time an operation was contemplated.

In spite of these often recurring attacks of serious illness the patient now looks surprisingly well. She is well-nourished and healthy in appearance. The most extraordinary feature in this patient's illness is the manner in which she recovers and regains her health and strength in spite of appearing to be hopelessly phthisical. On each of the previous occasions on which she was under my care it seemed to me very unlikely that she would regain her health, owing to the extremely unsatisfactory state of her lungs and of the general nutrition. On each occasion however she showed wonderful recuperative power, and this occasion is no exception so far as her lungs are concerned, for although her general nutrition was fairly good on admission with the present attack there was evidence of a good deal of mischief in both upper and lower lobes of the left lung, the right one being healthy. A very few weeks' treatment have however sufficed, for the lung is clearing rapidly, and she has gained 4 lbs. in weight in three weeks, and I hope that soon she will be able to leave the hospital in a good state of health.

PERISCOPE.

SURGERY.

BY GEORGE HEATON, M.A., M.B., F.R.C.S.

Results of Double Castration in Hypertrophy of the Prostate.
J. W. White, M.D. (*Annals of Surgery*, July, 1895).

In this paper Dr. White has collected together all the evidence obtainable as to the operation of castration for the relief of the symptoms caused by enlarged prostate. The paper, which is a most exhaustive one, is divided into three parts—a theoretical, a clinical, and an experimental portion.

In the first part the close relationship existing between the testicles and the accessory sexual glands—the prostate, Cowper's glands, and the seminal vesicles—is pointed out, and a theory advanced as to the possibility of connection between the overgrowth of the prostate and the testicular changes of advancing years. "The disappearance of the necessity for a given product without the coincident disappearance of the vital energy which was expended in producing it, might conceivably result in hypertrophy of organs intimately associated with those which were the source of supply."

The second part of the paper is devoted to a review of all the clinical evidence on the subject. A table is given of all the collected cases—102 in number—in which the operation has been performed, with the results. There have been among these 20 deaths, giving a mortality of 18 per cent. The majority of the deaths were due to uræmia in very old and broken-down patients. In approximately 87 per cent. of the cases there was rapid atrophy of the prostate after the operation. In 52 per cent. the great vesical irritability which had previously existed was much alleviated, and in 66 per cent. there was some return of power of expulsion of urine on the part of the bladder. In

about 46 per cent. of the cases there was a return to local conditions very much resembling the normal.

In the third part of the paper a number of observations are given, both clinical and experimental, on the value of unilateral castration, ligature and section of the vas deferens, and ligature of the vascular structures of the cord.

The paper concludes with a summary of the conclusions arrived at, amongst which are—That the theoretical objections which have been urged against the operation have been fully negatived by clinical experience, which shows that in a very large proportion of cases rapid atrophy of the prostate enlargement follows the operation; and that disappearance or great lessening in degree of long-standing cystitis (52 per cent.), more or less return of vesical contractility (66 per cent.), amelioration of the most troublesome symptoms (83 per cent.), and a return to local conditions not very far removed from normal (46·4 per cent.), may be expected in a considerable number of cases.

The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate.

Comparison with other operative procedures seems to justify the statement that, apart from the sentimental objections of aged persons on the one hand, and the real entirely natural and very strong repugnance to the operation felt by younger patients, castration affords a better prospect of permanent return to nearly normal conditions than does any other method of treatment.

Surgical Aspects of Peritoneal Tuberculosis.—A. Thomson, M.D., F.R.C.S. (*The Practitioner*, Vol. lv., No. v.).

It has been found, broadly speaking, that benefit results after surgical operation in tubercular peritonitis, whether the peritoneal cavity has been irrigated or simply inspected, whether drainage has been employed or not, or whether iodoform or any other agent credited with the possession of anti-tubercular properties has been introduced or not.

Various theories have been advanced to explain the favourable influence of laparotomy in these cases. That the mere removal

of fluid is not the essential factor is proved by the comparative absence of improvement after aspiration alone, and by the fact that improvement has resulted from laparotomy in cases where there has been no fluid. The admission of air into the abdominal cavity, the escape of ptomaines and toxins, the entrance of antagonistic organisms, the exposure of the peritoneum to sunlight, have each their respective advocates.

The one essential and constant factor seems to the author to be the incision itself. It has been shown repeatedly that an excision of a tuberculous processus vaginalis testis when patent and leading into a tubercular peritoneal cavity is followed by a cure of the peritoneal tuberculosis; and the mere handling and exposure of the diseased tissues in tubercular lesions within the abdomen has frequently been followed by disappearance of the tumour. Experiments by Nanotti and Baciocchi have shown that in dogs, after having induced peritoneal tuberculosis, if a laparotomy be performed the tubercular process may be completely cured or much diminished in activity.

In cases of diffuse serous or purulent ascites, due to tubercle, laparotomy is followed by the best results. When the fluid is serous the wound may be at once completely closed; when purulent it is better to drain for a few days. When the fluid is encysted and circumscribed by adhesions the results have also been, as a rule, remarkably successful.

In the third class of cases, in which fluid is either absent or relatively small in quantity, and in which adhesions and matting are the predominant features, more knowledge is required as to the advisability of operative interference. They are less favourable than the other two classes of cases, but are capable of being favourably influenced by laparotomy provided that there is no serious tubercular lesion elsewhere in the body.

Multiple Gunshot wounds of the Intestine; Resection of forty-three inches of the ileum; Recovery.—Geo. F. Wilson, M.D. (*Annals of Surgery*, September 1895).

The patient, an Italian labourer aged 39, was admitted with a self-inflicted wound in the middle line of the abdomen an inch

and half below the umbilicus. Laparotomy was performed and a wound of the ileum exposed with ragged everted edges. This was sutured with Lembert sutures. It was then found that the intestine was wounded in eight different places, some of the openings being such as to preclude the possibility of suture. The whole length of intestine involved—some forty-three inches in length—was therefore excised. The free cut edge of the mesentery was sutured with a continuous suture. The cut ends of the intestine were brought together by a Murphy's button, and the abdominal cavity was flushed with sterilised water. The patient made a good recovery. There was some suppuration of the abdominal wound where the bullet had entered. Liquid food alone was allowed until the button had been found. This occurred on the ninth day.

DISEASES OF THE THROAT, NOSE, AND EAR.

BY F. MARSH, F.R.C.S.

Croup and all Croupous Diseases Curable by Pilocarpin.—

Dr. Carl Sziklai (*Journal of Laryngology*, July, 1894).

In this paper the following conclusions are arrived at:—

1. Pilocarpin is a specific for croup in the widest sense of that word—*i e.*, for all croupous diseases.
2. The action of pilocarpin commences at once. In laryngitis crouposa cure is to be obtained in a few hours.
3. It is indifferent whether the pilocarpin is taken by the mouth or sub-cutaneously injected; also when applied as suppositories or globuli vaginales, the same result is certain.
4. In urgent cases, with imminent danger to life—*e.g.*, in an advanced stage of laryngitis crouposa,—sub-cutaneous injection is to be preferred to internal administration.
5. By pilocarpin not only is the duration of the disease notably shortened, but the mortality is reduced to 0 per cent.
6. In suitable cases, given early enough, pilocarpin has a preventive action.

7. Pilocarpin can be given up to twice the official dose without one having to fear any ill-effects.

Removal of Right Lobe of Thyroid for Graves' Disease.—R. Lake (*Journal of Laryngology*, July, 1894).

The patient, a young woman æt. 19, who always had prominent eyes, first developed symptoms of Graves' disease in August, 1893, especially exophthalmos, fainting, and palpitation. Her evening temperature was 100° F., and her pulse-rate 100. She was uninfluenced by drugs. On February 11th, 1894, the right lobe, which was the larger, was removed. The temperature fell immediately after the operation, being normal in ten days' time; the pulse fell to 80 in ten days. The exophthalmos was almost gone except when she vomited, as she did frequently from some gastric trouble, and both palpitation and faintness had disappeared. She declared herself to be in very good health. The left lobe was certainly smaller, and had fallen away from the trachea more under the sterno-mastoid. Microscopically the goître was partly composed of small cysts and partly of acini, showing active cell formation as described by Greenhill.

Exophthalmic Goître; Thyroidectomy.—(1) J. A. Booth, (2) R. S. Newton (*New York Med. Journal*, March 24th, 1894). Reported by R. Lake (*Journal of Laryngology*, July, 1894).

1. A well-marked case, in which the right lobe was excised. The pulse-rate fell from 150 to between 96 and 110 four months after the operation, and many nervous symptoms disappeared, as did palpitation; the exophthalmos was also improved. The remainder of the gland had diminished in size. The symptoms of exophthalmos had only existed six months, and that of goître two years.

2. The patient was only 12 years of age. The whole gland was excised, only a supernumerary gland being left. The pulse rate fell from 180 to 100, and the exophthalmos had disappeared in five months.

Contribution to the Faradic Treatment of Exophthalmic Goître.—Dr. H. Bordier (*Archives d'Electricité Médicale*

expérim. et cliniques, October, 1894. *Revue de Laryngologie, etc.*, April, 1895).

The author briefly reviews the different treatment of exophthalmic Goitre, "all powerless both medical and surgical." He then passes to the electric treatment, and points out the advantages of the method of R. Vigourous, which dates from 1806, and which consists in the employment of faradisation. The general condition is rapidly ameliorated, the goitre diminishes quickly in volume, and the tremulousness decreases proportionately. The exophthalmia and tachycardia are longer in disappearing; the amelioration of these symptoms is not appreciable until towards the end of the first month and subsequently. Two cases are quoted which had been cured in the "Clinique Electro-thérapique" de la Faculté de Bordeaux.

Note on the Treatment of Goitre by Electrolysis.—Dr. Thomas (*Archives d'Electricité Médicale expérim. et cliniques*, October, 1894. *Revue de Laryngologie, etc.*, April, 1895).

The author is not a partisan of operative methods, in spite of the success obtained, because of the dangers and the special evils of anæsthesia, attributed by him to a "thymique" condition of the patient. Electrolysis, according to the method employed by Prof. Bergonié, seems simple and without danger, but the process is tedious and painful. A case is quoted where the patient, æt. 34, gave up the treatment, because of the pain, after the sixteenth sitting, in spite of improvement already obtained.

Recurrence of Lymphoid Hypertrophy in the Naso-pharynx.—New York Academy of Medicine, Section of Laryngology and Rhinology. Reported in the *Journal of Laryngology*, March, 1895.

Dr. F. S. Hopkins and others recorded several cases of recurrence after thorough removal of adenoid tissue under anæsthesia. In one case a second recurrence took place sufficient to impair the hearing and resonance of the voice, although after the second operation bare bone could be felt in the vault of the pharynx. The speaker was at a loss to explain

the recurrence. (The so-called recurrence in this and other cases was probably an overgrowth of granulation tissue during the healing of the wound caused by the ablation of the periosteal structures—a procedure in my opinion unnecessary and unjustifiable.—F. M.)

The chief design of the paper was to direct attention to this danger of recurrence, with the hope that greater care would be taken both in operating and in the after-treatment. The operator must assure himself that there is no obstruction in the nasal passages; if any such exists it should be corrected. After the operation, iron should be administered for several weeks, with such remedies added as seem to be indicated, bearing in mind the possibility of a constitutional taint of rheumatism, tuberculosis, or syphilis. A further point of prime importance is that of the hygienic surroundings of the child, particularly the sleeping-room.

The consensus of opinion subsequently expressed was that recurrence was probably either the result of incomplete removal or there was some constitutional dyscrasia to account for it.

Tuberculous Adenoid Vegetations of the Naso-pharynx.—Dr. M. Lermoyez (*Ann. des Malad. de l'Or., etc.; Revue de Laryngologie, etc.*, April, 1895).

Unexplainable recurrences, unsatisfactory and even harmful results after operation, tend to show that adenoid vegetations admit of classification. Michel Dansac divides them into Scrofulous, Lymphatic, and Syphilitic varieties. M. Lermoyez thinks it possible to individualise a variety of adenoid vegetations seldom met with—a tuberculous form. He founds his opinion on two facts, one where ablation determined the development of a tuberculosis latent until then; the other, where histological examination of a recurring vegetation, removed from a child *æt.* 6, demonstrated its tubercular character—giant cells and bacilli of Koch in great numbers. This examination made by M. Dansac has been described by this histologist under the name of "Tubercular Vegetation of the Pharyngeal Tonsil." The child had tubercular antecedents on the maternal side, and

had on its neck numerous traces of gland suppuration. The tubercular nature of adenoid vegetations of the naso-pharynx, far from making one reject intervention, should, on the contrary, command it. The operation should be followed by active local and general treatment.

REPORTS OF SOCIETIES.

BRITISH MEDICAL ASSOCIATION.

BIRMINGHAM AND MIDLAND COUNTIES BRANCH.

The second ordinary meeting of this Branch was held in the library of the Medical Institute, Edmund Street, on Thursday, November 14th, 1895. The chair was taken at 3-30 o'clock by the President, Dr. CARTER, forty-three members being present.

The following member of the Association was elected a member of the Branch :—E. P. Satchell, M.B., B.S. Dur., Handsworth.

The Council reported that the question of the formation of an Ethical Committee was under consideration, and the minute relative to the same was continued.

Dr. Foxwell read a paper on "Enlargement of the Liver." Abstract of Dr. Foxwell's paper :—The chief causes—alcohol, cardiac debility, (*e.g.*, after influenza), valvular disease, bronchitis and emphysema, phthisis, syphilis, gout, diabetes, gallstones, specific fevers, abdominal catarrh, leucocythæmia ; the methods of detecting this morbid change and the efficiency of these ; its frequency ; the varieties of its morbid anatomy ; the condition of the spleen, with especial reference to those cases where it is notably increased in size ; therapeutic suggestions.

The paper was discussed by the President and Drs. Rickards and Douglas. Dr. Foxwell replied.

Mr. Barling read a paper—"Note on three cases of Blood Cyst in the Abdomen, probably of traumatic origin." Abstract of Mr. Barling's paper:—Case 1, blood cyst over right kidney appearing eighteen months after an injury (this contained 5 urea); Case 2, blood cyst (? mesenteric) noticed some months after an injury (it contained neither urea nor proteolytic ferment); Case 3, blood cyst containing a proteolytic and starch converting ferment and probably connected with the pancreas. The use of the term "pancreatic cyst," and their locality and origin is briefly discussed; the fate of these blood cysts if left untreated; the treatment to be adopted—incision and stitching the opened cyst to the abdominal incision; the disadvantages of aspiration, of injection, and of enucleation.

Dr. Malet read a note of one similar case.

The papers were discussed by Mr. Marsh (who related a case), Mr. Leedham-Green, and Dr. Short.

Mr. Barling replied.

Complete Abdominal Extirpation of the Uterus and Appendages.—Mr. John W. Taylor showed a large myoma of the uterus, which he had removed three months previously by the operation of complete abdominal extirpation of the uterus and its appendages.

This operation afforded a thorough and successful method of dealing with a case in which the older surgical methods were inapplicable. The pelvis was blocked by the tumour; and when this is the case, simple removal of the appendages is often unsatisfactory, and the clamp operation is inadmissible.

The patient, who had suffered from severe attacks of hæmorrhage before the operation was done, had made a good recovery, and was also shown to the members present by Mr. Taylor.

PATHOLOGICAL AND CLINICAL SECTION.

The first meeting was held in the Medical Institute on Friday, October 25th, at 8 p.m., Mr. WILLIAM THOMAS in the chair.

Punctured Wound of Heart.—Mr. A. Lucas showed a youth who had recovered from a stab near the left nipple, attended by severe symptoms. From the profuse hæmorrhage, profound shock, hæmo-thorax, and pericarditis, Mr. Lucas inferred there had been a puncture of the wall of the right ventricle; and he had verified by experiments on the cadaver that in stabs similar to the one described, the right ventricle was wounded.

Congenital Dislocation of both Knees forwards.—Mr. L. Gamgee showed a child, aged $3\frac{1}{2}$ months, with congenital dislocation of both tibiæ forwards and rather outwards. Both knees were in a position of marked hyper-extension, and could not be flexed. The patellæ appeared to be absent.

Morbid Anatomy of the enlarged Cirrhotic Liver.—Dr. Foxwell showed microscopic sections taken from large (92 oz.) and small (46 oz.) alcoholic livers, exhibiting (a) fibrous tissue penetrating to the centre of the lobules—*i.e.*, intra-lobular cirrhosis—in both livers; (b) a larger amount of fatty change in the small than in the large liver. These appearances were in accordance with Dr. Foxwell's belief that there is no special character in the anatomical distribution of fibrous tissue in the cirrhosis arising from alcohol, and that when the alcoholic liver is enlarged, the enlargement is not usually due to fat.

Another section exhibited the deposit of fibrous tissue around the hepatic vein in a case of cardiac disease. The occurrence of this central cardiac cirrhosis Dr. Foxwell did not think was sufficiently insisted upon, though he thought it arose oftener than the peripheral (portal) cirrhosis, which authors frequently described as the result of cardiac feebleness.

Splenic Anæmia.—Dr. Douglas Stanley showed the organs from two cases of "splenic anæmia." Both cases were males, and had been under observation for a considerable period. In

one (J. K.) there had been very marked anæmia for several years, characterised by great reduction in the number of red blood corpuscles with marked scarcity of the white. There was great enlargement of the spleen, and latterly some pigmentation of the skin. Death was due to acute peritonitis caused by perforation of a gastric ulcer. The spleen (2 lbs. 8 oz.) was extremely firm, and the capsule much thickened. On section, it showed considerable fibrosis. There was nothing resembling the lesions of Hodgkin's disease. The pancreas was indurated; the liver showed some cirrhosis of recent date; the bone-marrow was very red and gelatinous.

The second case (A. H.) showed the same conditions during life, but death was due to severe hæmatemesis. Similar changes were found *post mortem*, but the supra-renals were extremely atrophic. In the case of J. K. they were not reduced in size, but were somewhat firm, and showed marked fatty degeneration.

Dr. Kauffmann showed a specimen of a "benign epithelial tumour" of the soft palate.

United Intestine with Murphy's Button in situ.—Mr. Barling showed a specimen of small intestine with a Murphy Button *in situ*. The specimen was taken from a case of Strangulated Femoral Hernia (a female aged 34) in which the gut had perforated on the fourth, or perhaps the third day after herniotomy. Strangulation had existed for about sixty hours, and on opening the sac a small loop of claret-coloured œdematous gut was found which, when the constriction was divided, slipped back before any examination could be made of the lines of constriction on the gut. All went well until three days after, when the patient complained of discomfort in the abdomen, but there was no tenderness, distension, or vomiting. On the fourth day there was complaint of severe abdominal pain, the abdomen was distended, tender, and very resonant in the umbilical region. The pulse had increased from about 80 to 116, and the respiration from 20 to 32. The bowels had not acted since the operation. The abdomen was opened in the middle line and a quantity of free gas let out. Semi-purulent fluid and intestinal contents

were found in the lower part of the abdomen, and there appeared to be general peritonitis. The intestines were adherent around the perforation which lay some inches above the femoral ring, and from which leakage was still going on. About three inches of small intestine was resected and the ends were united by a three-quarter-inch button, and the belly was thoroughly flushed and drained. The patient died thirty-six hours later of an advancing peritonitis.

The autopsy showed that union was going on satisfactorily, but that at one point where the lower margin of the button impinged on the intestinal wall the pressure had produced destruction and only the peritoneum still remained unperforated.

It is possible that the presence of peritonitis is a contra-indication to the use of the button, as, when it exists, the sodden and œdematous intestinal walls are more likely to suffer from pressure by the weight of the button than would be the walls of healthy intestine.

MIDLAND MEDICAL SOCIETY.

The second ordinary meeting of this society was held on November 20th, at the Medical Institute, Dr. T. EDGAR UNDERHILL, the President, in the chair.

Mr. J. T. J. Morrison showed a specimen of exostosis of unusual size which he had removed from the lower end of the left femur. The patient was a collier, aged 22, who had been aware of the swelling for sixteen years. It had not interfered with locomotion or caused any pain, but it had led to his rejection as a candidate for the police force. Mr. Morrison briefly discussed the etiology of cancellous exostoses springing from epiphyseal cartilage, and remarked on the advantage of operating by the bloodless method, and of dressing the wound without drainage before removing the Esmarch tube. In the present case the bony pedicle had been chiselled through, the deep wound had healed in a few days by first intention, and the patient is now active on police duty.

Dr. Leslie Phillips showed (1) a case of lymphangioma circumscriptum cutis in a girl aged 17. The patch was situated over the right scapula, and was stated to have been of six months' duration. It was the size of a small hand, fawn or straw coloured, and consisted of aggregated raised, flattened, resisting vesicles almost verrucous in character. Over much of the eruption vascular tufts were seen, giving it an ecchymosed appearance in places. The vesicles when punctured exuded lymph. There were no subjective symptoms. The patient had red hair, and the angles of the mouth were scarred. The exhibitor expressed doubt as to the reliability of the reputed duration of the disorder. As the eruption was out of sight and did not give rise to inconvenience, it was probable that its onset was not accurately observed. Dr. Phillips also (2) showed a man with lichen ruber planus of three months' duration, and notable in that it began acutely as an eruption indistinguishable from patchy erythematous-squamous eczema, a character which still persisted in some of the lesions.

Dr. Malins showed a large cystic ovarian tumour, the chief peculiarity of which consisted in two broad pedicles. The ovaries were firmly united, probably from pelvic pressure in early growth. They had increased rapidly in size, one large cyst reaching up to the liver on the right side. The patient was single, æt. 36, was in good health up to June. A week before admission to hospital she had been tapped, 80 oz. of fluid of sp. gr. 1019, being evacuated from the cyst on the right side. The pedicles were tied in several divisions with prepared silk, and recovery was without incident.

Mr. Heaton showed for Mr. Law Webb a dermoid ovarian cyst removed from a woman aged 40. The cyst when removed contained the usual pultaceous fatty material found in such cysts. Attached to the cyst wall at one point was a portion of a jaw with five well-formed teeth firmly fixed in it. They resembled the incisor and pre-molar teeth of a child of 6 years old. From another point in the cyst wall there grew a long tuft of fine silky hair some five or six inches in length.

Mr. Prosser showed a patient with a purpuric eruption covering the entire body.

Mr. Gamgee showed a specimen of ruptured tubal pregnancy. Patient, age 39, has had five children born alive and one miscarriage, the latter seven months ago. Since then she menstruated regularly every five weeks. Lost some blood on September 18th, this being the time when she expected to menstruate. On September 19th she had some abdominal pain, and on September 22nd felt sudden violent abdominal pain, vomited, and became collapsed. Laparotomy twelve hours after onset of symptoms. Pelvis and lower part of abdomen full of blood. Left tubal pregnancy, which had ruptured, found. Broad ligament ligatured with silk, and tube removed. Abdomen cleaned by sponging. Following operation patient had a severe attack of bronchitis, but had no abdominal symptoms, and was discharged cured on Oct. 24th.

Mr. William Thomas read a paper entitled "Notes on a Paris Hospital Visit." The hospitals visited were the Hôtel-Dieu, Laennec, and one of the hospitals for sick children. He described the wards, and contrasted them somewhat unfavourably with those of English hospitals. He spoke with approval of the system of "*consultations*" instead of out-patient practice, and described several operations which he saw performed, noting some points which might give rise to discussion.

KIDDERMINSTER MEDICAL SOCIETY.

Meeting held at the Kidderminster Infirmary on Friday, 22nd November, 1895, Mr. W. MOORE, President, in the chair.

Mr. J. L. Stretton read notes of a case of appendicitis.

1. J. P., age 19, a farm labourer, has suffered from occasional attacks of colic, which were never severe. On Friday he had severe pain in the belly when he got up in the morning, but he was able to go to work. The pain subsided, and he ate a very large dinner of pork and bread. Towards evening the

pain returned in greater intensity. Dr. Oldham was called in on the following morning, and found him complaining of intense pain all over the abdomen, which was distended and tympanitic. Six grains of calomel were given, and fomentations applied. The next morning he was still in pain and had not slept; the calomel had not acted. An enema was administered without result. Temperature 103° , pulse 112. He passed flatus during the day, and vomited a large quantity of bile in the evening. Dr. Oldham brought him to the hospital about 10 p.m.

On admission he complained of abdominal pain, and lay on his back; the abdomen was swollen and tense and did not move on respiration. There was a distinct fulness in the right iliac region.

Under ether, an incision was made in the middle line. Some stained fluid escaped from the abdomen, and the coils of small intestine were covered with lymph. The appendix was found perforated near the base. It was ligatured, removed, and the stump sutured, the abdomen flushed with hot boracic, and a drainage-tube inserted; dressed with cyanide. One-ounce doses of hot water were administered; but as this caused vomiting, it was stopped. He died thirty-six hours after the operation, immediately following a copious vomit. A limited *post mortem* disclosed a quantity of pus in the right iliac region. The appendix removed contained a faecal concretion.

2. E. B., age 40, was admitted suffering from an injury to the left shoulder, which took place five weeks previously from falling down fourteen steps. She was under the impression that her shoulder was dislocated, and was unable to move the limb. Examination revealed a sharp prominence beneath the outer end of the clavicle, and the shoulder joint was fixed. Under an anæsthetic the arm was forcibly manipulated, several adhesions were broken down, allowing free movement at the joint, and the bone was re-fractured, but could not be brought into position. An incision was made over the prominence, and the fracture exposed. It ran obliquely downwards and out-

wards through the lesser tuberosity, the lower portion of which formed the sharp projection above noted. There was so much thickening that it was necessary to remove this (projection) with bone forceps before the bones could be brought into position. The wound was brought together with catgut sutures and dressed with cyanide gauze. A pad was placed in the axilla, and the arm bandaged to the chest, a shoulder cap being applied outside. The dressings were removed in a week, showing primary union. Passive movements were commenced the following week with daily increasing massage, and she was discharged at the end of five weeks after admission with a useful arm.

3. A child six weeks old, with congenital contraction affecting the index finger of the right and the middle of the left hand, resembling in appearance Dupuytren's contraction.

4. A quarryman, age 24, with a piece of granite in the anterior chamber of the eye. He had an accident four years ago; a stone flew up into the eye, which affected his sight; the present injury was sustained about a month ago. A piece of granite about the size of a split pea is distinctly visible in the anterior chamber and moves with the position of the head. The scar on the cornea is in the line of vision, and the pupil is contracted and irregular owing to complete posterior synechia probably due to the former accident, and it is this condition which has prevented the sharp piece of granite slipping into the deeper structures. He can barely distinguish light, and the eye has an unhealthy appearance.

Mr. W. Hodgson Moore described a case of carbonic oxide poisoning. The victim was a young healthy bricklayer; he was at work pointing the defects in a retort which had not been used for some time; his mate left him for a few minutes and found him unconscious on his return. When seen by Mr. Moore he was quite dead, and all efforts to restore animation were unavailing. The only peculiarity noticeable about the body was the salmon pink colour of the cheeks which extended to the chest and arms; on raising the legs it produced a suffused

appearance of the face. *Post mortem* was made two days later. The pink colour was still quite distinct, and the muscles when cut into exhibited a bright colour; the blood was fluid and very bright; with a 30 per cent. solution of caustic soda red stringy clots were produced. The organs of the body were healthy, but all exhibited the peculiar colour. The Gas authorities denied the possibility of carbonic oxide poisoning, but Mr. J. L. Stretton, who attended the *post mortem* on their behalf, strongly supported Mr. Moore's view. It is probable that in scraping some of the decayed places or in moving some of the rubbish admitted to be on the floor of the retort, he liberated some of the gas, a very small quantity of which produces a fatal result.

2. A brain showing multiple tumours generally distributed, probably malignant, from a man aged 24 years, who was admitted about ten days previously with severe headache. He was too ill to give an exact history, but it was ascertained that the illness commenced five weeks previously with fits (Jacksonian epilepsy on the left side), and had got worse. He had been ill at times all his life, and his right side had been weak. Has had "lumps" in the neck four years. He had double optic neuritis and considerable inco-ordination. No remedies had any effect, and he died comatose.

Mr. Davies showed the spleen and internal organs from a case of leucocythæmia in a female aged 10 years, admitted under Mr J. L. Stretton in a moribund state, though she had only been ill seven days.

Mr. Davies read a paper entitled "Rough Notes on Clinical Treatment."

REVIEWS.

EDINBURGH HOSPITAL REPORTS, VOL. III.

THE previous volumes of this series were such as to make us look forward to the next issue, and as in the case of the others, we have not been disappointed. According to custom the first articles are of an historical nature, but this year they are modern rather than ancient history, as the first contribution is an account by Dr. Clouston of the new "Edinburgh Royal Asylum" at Craiglockhart. This is followed by an account of the Deaconess Hospital by Dr. G. A. Gibson. It will be quite impossible to give even in a condensed form any *résumé* of the various articles. We shall therefore select for more particular notice a few of the more important contributions.

Dr. Wyllie contributes an article on Gastric Flatulence. This he divides into three varieties—(1) That in which gases are produced within the stomach by fermentation of its contents. (2) That in which, one way or another, quantities of atmospheric air are introduced into the stomach from without. The former he calls true, the latter false gastric flatulence. The causes of the first are chiefly alcoholic fermentation with the formation of CO_2 ; lactic and butyric acid fermentation with the formation of butyric acid, CO_2 and H. (3) The peculiar form of fermentation which gives rise to marsh gas and other carburetted hydrogens. It is however to the second form that Dr. Wyllie's paper is mainly devoted. He finds that (1) the patients who swallow air are obviously nervous and hysterical, though perhaps fairly well-nourished. (2) Eructations are usually frequent and loud, and continue for a long time. (3) "If after such a patient has described the terrible sufferings produced by the wind the physician quietly asks him or her to let him hear the wind, the patient will almost always begin violently to make a series of eructations." The author finds that by putting a cork into the

patient's mouth and so preventing air-gulping, the eructations become impossible, and in this way the causation of the condition can be verified. This is not only of diagnostic but therapeutic value, as it helps to break the habit of eructating which the patient has acquired. At the same time the writer says it is not to be supposed that such cases occur only among hysterical women, for he has observed many cases among men at various ages. He describes how air is made to enter the œsophagus and stomach—1, by air-gulping; 2, by true swallowing of air; 3, by air-suction. These various mechanisms he describes fully, and illustrates by cases. It is also pointed out how bottle-fed children may swallow air sufficiently to cause serious flatulent distension, and which may be followed by rather serious consequences. Dr. Wyllie even thinks that many cases of so-called over-laying may be due to enormous distension of the stomach with gas from sucking an empty nursing bottle. In conclusion, the treatment of cases of flatulence should, according to the writer, depend on whether it be one or other form, as the management of the cases will be very different.

There is a long article on the thyroid treatment of Myxoedema and Sporadic Cretinism by Dr. Byrom Bramwell. Notes of several very striking cases are given, these being illustrated in Dr. Bramwell's usual style. The paper contains many practical suggestions as to the management of such cases, both before and after the removal of the myxoedematous condition.

Dr. R. F. C. Leith contributes an important paper on inflammatory lesions of the thoracic contents arising from sub-diaphragmatic conditions due to gastric ulcer. In these conditions it is not necessary that the diaphragm should be perforated, as thoracic inflammation may be excited from the peritoneum without any actual lesion. On the other hand, perforations may be found in the diaphragm. Pericarditis may arise, most frequently with or after a pleurisy, pneumothorax, or pneumonia; more rarely occurring as the only lesion in the thorax; still rarer is perforation of the pericardial part of the diaphragm as a cause of pericarditis alone. This paper is

followed by a second one by the same author on Intrathoracic Inflammation following upon Sub-diaphragmatic Suppurations arising from lesions of the liver, spleen, kidney, intestine, and vermiform appendix. These two papers might have been combined in one.

One of the most interesting articles is "A Contribution to the Localisation of Cerebellar Lesions," by J. Purves Stewart, M.A., M.B. The case was that of a woman who complained of headache, giddiness, and difficulty in walking. She was aged 25, married, and had complained of these symptoms for ten months before admission. There was no evidence of tubercular or inherited specific disease. One child had had an indefinite skin eruption; the patient had never had any miscarriages. She complained of sharp headache exactly over the left eye. There was no cutaneous anæsthesia anywhere, and the muscular sense was normal. There was marked nystagmus; the left pupil was larger than the right, but otherwise there were no eye symptoms. The ophthalmoscope showed double optic neuritis. The patient was deaf in the right ear to all tests. There was no motor derangement except impaired action of the soft palate, evidenced by a regurgitation of fluids through the nose. Both knee-jerks were equally exaggerated; there was occasional ankle-clonus. There was a reeling unsteady gait, and there seemed to be a slight tendency to fall to the right side. On standing with the eyes shut and feet together, the swaying was very marked; and here also she tended to fall to the right side. All other symptoms were unimportant.

Dr. Purves Stewart diagnosed intra-cranial lesion on general grounds; and, from the absence of distinct motor paralysis combined with the presence of a staggering gait and distressing vertigo, the cerebellum was considered to be the part affected. Further, on account of the marked headache over the left eye and the deafness in the right ear, it was supposed that the tumour was in the lower part of the lateral cerebellar lobe, low, because apparently the spinal accessory seemed implicated.

The writer's explanation of the left frontal headache, and the

value accorded to it, is that each superior cerebellar peduncle arises mainly in the interior of one Dentate Nucleus, but also in part from the cortex of the cerebellum, and especially from the lower part of the lateral lobe. Its fibres, when traced upwards, are found to decussate with those of the opposite side between the Corpora Quadrigemina. Some of the fibres appear to end in the red nucleus of the tegmentum of the opposite side, whilst other fibres pass the nucleus and run on to the frontal lobe of the opposite cerebral hemisphere, thus constituting a fronto-cerebellar tract. The further history completes the value of this most instructive and interesting case, for when the patient was trephined over the right lobe of the cerebellum, a tumour was found (fibro-sarcoma) half an inch below the surface and low down in the lateral lobe, *i.e.*, in the position in which Dr. Purves Stewart located it. The subsequent history of the patient was very satisfactory.

This volume of reports is in every way equal to the preceding, and is a valuable record of the large amount of clinical work of the Edinburgh hospitals, and shows the care with which this material is utilised.

D. S.

DIPHTHERIA AND ITS ASSOCIATES.*

THIS is one of the most comprehensive works on the subject, and contains much information of practical importance. The book opens with a statement that diphtheria is an acute infectious disease due to the presence of a specific micro-organism—the Klebs-Loeffler bacillus; but then the author speaks of pseudo or false diphtheria, resembling diphtheria, but distinguished from either the simple or complex varieties by the absence of the specific bacillus. It may thus be termed the non-bacillary. This is a statement which is liable to increase the difficulties of the question, for why call the condition diphtheria if the specific bacillus is absent. We have in diphtheria

* Diphtheria and its Associates. By Lennox Browne.

a disease with several characteristics, such as the formation of false membrane on certain mucous surfaces, general intoxication acting more especially on portions of the nervous system, etc. Why, therefore, speak of a local throat affection as "non-bacillary diphtheria" simply because no Klebs-Loeffler bacilli are found? Future research will, we hope, show a cause for other throat conditions than diphtheria in which there is formation of false membrane.

The first chapter is on the history and the rise of diphtheria to a place in nosology, and in it reference is made to the vexed question of the identity or non-identity of croup and diphtheria.

Chapters II.-IV. are concerned with the etiology of the disease, and the various facts already well known are reviewed in reference to soil, climate, season, etc. These chapters contain an abstract of reports, in tabular form, of various Local Government Board investigations into outbreaks of diphtheria. There are also interesting details as to the manner in which other diseases, such as typhoid fever, measles, scarlet fever, etc., may influence the predisposition to diphtheria; also the relation of other forms of throat affections, such as enlargement of the tonsils, adenoid vegetations, and chronic catarrh. There is a long description of the Klebs-Loeffler bacillus in its various forms, and the accounts are copiously illustrated from microphotographs. The various forms of micro-organisms found in association with the bacillus are fully described. The author gives an account of that confusing form which has unfortunately been called "pseudo diphtheria bacillus," and draws attention to the difficulty of distinguishing it from the true Klebs-Loeffler form. The only thorough means of so doing is by injection, a method which unfortunately is most unpracticable when most wanted. The author gives the most recent opinions as to the relation of this form, but does not appear to commit himself to any special view. There is a clear account of the toxic products of the diphtheria bacillus and their mode of action.

Chapter V. gives an account of the morbid anatomy of the disease, especially of the histology of the diphtherial membrane.

There is a very practical and succinct account of the whole method of bacteriological diagnosis, and details are given, as to making cultures directly from the throat, or for sending swabs from a distance. This is followed by what may be called a clinical description of diphtheria, and in it the author draws attention to the fact that although there may be albuminuria in a large number of cases, still it is of no great diagnostic importance in simple cases. In the author's opinion renal complications are an early manifestation in diphtheria, as compared with scarlet fever.

Chapter VIII. is devoted to a description of different cases of diphtheria, illustrating its varieties; and the author gives several very beautiful coloured illustrations demonstrating the various appearances of the throat. Side by side with these is a reproduction of a micro-photograph showing the different organisms found in the cases in question. The well-known skill of the author as an artist is well shown in the beautiful manner in which these illustrations are given. We note also that in the majority of cases a record is given of the organisms other than Klebs-Loeffler bacillus found in cases of diphtheria. This is a point which is too frequently omitted, and greatly detracts from the value of bacteriological reports.

In Chapter IX. the various points on which prognosis depends are carefully considered, such as the pulse, temperature, situation of the membrane, etc., followed by an account of diphtheritic neuritis. There is a long chapter on treatment which strikes one as being rather of a specialist type, as we might expect. There is a good account of intubation of the larynx containing many practical hints.

The book closes with an appendix on the serum treatment of the disease. This in itself does not call for any special notice, containing as it does what is now common knowledge, but in concluding this chapter the author would give us the impression that his view of serum treatment is rather one of disappointment.

Mr. Lennox Browne's work on Diphtheria and its Associates is one that will prove extremely useful in many ways, for

it collects into a small compass much material which hitherto has been too scattered to make it easy for the general medical reader to lay his hand on without considerable trouble.

D. S.

AN ATLAS OF THE FERTILISATION AND KARYOKINESIS OF THE OVUM.*

THERE is no branch of biology which has in recent years received such constant attention as that which deals with the structure and history of the cell, and particularly of those all-important cells the ovum and the spermatozoon. Nor has the labour which has been expended in this direction been in any way in vain, for it has resulted in the discovery of many new and most significant facts respecting the important processes preceding and accompanying fertilisation—facts which, in their bearing on the question of heredity, and particularly on that of the share in the new organism of the male and female progenitors respectively, are of the utmost importance to all students of biology. But the very number of these discoveries, the rapidity with which they appear, and in this, as, alas! in all other branches of natural science, the extraordinary variety of the periodicals in which they see the light, make it impossible for any person, save the extra-specialised specialist, to keep himself *au courant* with the daily accumulating observations. All students will therefore hail the appearance of the handsome volume now under review, which we may at once say reflects the utmost credit upon the author, the photographer, the printer, and the publishers.

Professor Wilson's observations have been made upon ova of *Toxopneustes variegatus*, the sea urchin, which were artificially fertilised in sea water, fixed by sublimate-acetic (which he regards as the best reagent for this purpose), sectioned and

* An Atlas of the Fertilisation and Karyokinesis of the Ovum. Edmund B. Wilson, Ph.D., and Edward Leaming, M.D. Columbia University Biological Series. New York and London: Macmillan and Co. 1895.

stained with Heidenhain's iron-hæmatoxylin. The photographs have been taken by Dr. Leaming, and reproduced by a mechanical process involving no retouching of the plates. Thus, as far as photos. can convey it, a true idea of the microscopic appearance of each object has been given.

The first part of the letterpress is devoted to an excellent *résumé* of the present position of opinion respecting the maturation, fertilisation, and early segmentation of the ovum, which will be found most valuable by the student. We note especially that the author confirms the views of those observers who believe that the centrosome is the dynamic agent in the process of development, that it is formed solely from the middle piece of the spermatozoon, and not from the factors of both sexes, and that it has consequently no part in the hereditary transmission of the qualities of either parent. This section of the book concludes with a tabular summary of facts which the reader will find very useful in arranging and crystallising his views.

The second and larger part of the book consists of forty phototypes, which illustrate the ovum from its condition prior to the extrusion of the polar bodies, through the processes of fertilisation, to the stage of a sixteen-celled blastula. It is of course conceded that nothing can convey the same impression as that gained by examining the object itself under the microscope, but so far as photos. go, it would be difficult, we think, to match these for excellence, and to those students—and they must necessarily be the majority—who cannot see the actual objects themselves, we can very strongly recommend these beautiful plates with the descriptions which accompany them. They will be a boon to many who have up to now been obliged to struggle with the imperfect descriptions and most inadequate representations which so far have been given by most of the text-books.

B. C. A. W.

THE STRUCTURE OF MAN.*

It is a fashion of the present day with a certain breed of so-called Comparative Anatomists, forgetful of the rock whence they were hewn, to disparage the study of Human Anatomy and to prefer the emmet, the frog, or the worm, to the highest, the most specialised and the most carefully studied type—Man—as an object of scientific enquiry. Amongst these we are glad to see that Professor Huxley's learned successor at the Royal College of Science is not to be included, for he has evidently devoted himself *con amore* to the labour of editing and annotating the admirable treatise with which we are now dealing. Long known to the limited circle of readers to whom professedly "Der Bau des Menschen" was addressed, the enlarged edition, with its numerous illustrations and admirable notes, must surely appeal to a large circle of readers.

The object of the author has been to give the pith and marrow of Comparative Anatomy as it relates to and sheds light upon the natural culminating point of that science—Man. Thus he deals with all those rudimentary or vestigial structures which always, as in the case of the plica semilunaris in the eye, or occasionally, as in that of supernumerary mammæ, are to be met with in the human body. In detail he considers each of these structures and points out its exact relations to the ancestral tree of vertebrates. But, further, he points out those organs in the body which, like the larynx, exhibit progressive characters, which tend, that is, toward a more perfect adaptation.

No more admirable supplement to the ordinary text-books of anatomy could possibly be conceived, and we can only wish that those responsible for medical education would require students to study the subject of Comparative Anatomy on lines such as these, instead of teasing them with the present inadequate and nearly useless course of Elementary Biology.

* The Structure of Man. By Dr. R. Wiedersheim. Translated by H. and M. Bernard. Edited and annotated by G. B. Howes. London: Macmillan. 1895.

In any case, we can most heartily commend this book to all students reading for any of the higher examinations in Anatomy, such as that for the Fellowship of the English College of Surgeons. To all those who desire to study the subject of Human Anatomy intelligently this book is absolutely indispensable.

We should add one word of congratulation to the translators on the excellent manner in which their part of the work has been executed.

B. C. A. W.

THE TALLERMAN-SHEFFIELD PATENT LOCALISED HOT-AIR BATH.*

THIS little brochure is practically an advertisement of a "patent" remedy which is described as "a new invention in the treatment of rheumatism, gout, rheumatic arthritis, stiff and painful joints, sprains, etc., by the local application of super-heated dry air."

The "invention" consists of a copper cylinder in which a limb or other part of the body may be enclosed, the air within the cylinder being heated to a high temperature—250° to 300° F.—by means of gas jets or oil lamps burning beneath, and being kept dry by an arrangement of ventilation which constitutes really, according to the pamphlet, the chief merit of the invention.

We cannot speak from our own knowledge of the value of the "novelty," but we are not much impressed in its favour by carefully looking over the "Notes of Cases" which have been treated by a few well-known surgeons in London and the provinces. We feel that it would have been better to have given the treatment a much longer trial before allowing the patentee a free use of names which may be supposed to carry

* The Tallerman-Sheffield Patent Localised Hot-air Bath, with Notes of Cases. London: Baillière, Tindall, and Cox. 1895.

with them the weight of authority. Mr. Willett submitted the method to trial in the wards of St. Bartholomew's Hospital, and gave the results of his experience in a clinical lecture which appeared in the *Clinical Journal* in May, 1894. It appears to us that the cases which derived most benefit are exactly those which can be quite well dealt with by non-patented processes.

We were much struck by Mr. Willett's observations on what he regarded as "the best test-case of the series"—a middle-aged woman with a rheumatic wrist joint, which had entirely recovered, leaving only stiffness of fingers and hand, resulting from the long-continued immobility. She had the bath treatment for two months, and did not seem to be in the least degree benefited. Mr. Willett's conclusions may be thus summarised:—When employed for contractions in recent affections or sub-acute inflammatory diseases, such, for example, as may follow upon simple synovitis, cases, that is, which would yield readily and without force under an anæsthetic, therapeutic action will be both rapidly marked and curative. In permanent contractions or fibrous anchyloses, the result of old-standing arthritic diseases, the direct therapeutic action is soon exhausted.

. . . . If articular or capsular adhesions exist, valuable time would be wasted in attempting to cure such cases in this hot-air cylinder. Such adhesions having been forcibly broken down, recovery will in many cases be hastened by the subsequent use of the heated cylinder. In such permanent deformities as congenital club-foot, contracted scars after burns, and bony ankylosis, it is absolutely useless to suppose any effect whatever could result.

If the Tallerman-Sheffield patent process can show results *which cannot be obtained by other means*, we shall certainly give it a trial, but we do not yet feel "excited" over its possibilities.

J. N.

New Books, etc., Received.

- An Atlas of the Fertilisation and Karyokinesis of the Ovum. By EDMUND B. WILSON. Ph.D. Prof. of Invertebrate Zoology in Columbia College, with the co-operation of EDWARD LEAMING, M.D., F.R.P.S. New York and London: Macmillan and Co. 1895.
- The Diseases of Children's Teeth, their Prevention and Treatment. By DENISON PEDLEY, M.R.C.S. Eng. F.R.C.S. Ed., Dental Surgeon to Evelina Hospital. Illustrated. London: J. P. Segg and Co.
- On Appendicitis and Perforation of Gastric and Duodenal Ulcer. By GILBERT BARLING, M.B., B.S., F.R.C.S., Surgeon to the General Hospital, and Joint Professor of Surgery, Mason College, Birmingham. Birmingham: Cornish Bros. 1895.
- An Essay on Malaria and its Consequences. By ROBERT LINDSAY, A.M., M.B., F.R.C.S. Ed., Retired Surgeon, A.M.D. London: H. K. Lewis. 1895.
- Guy's Hospital Reports, Edited by E. C. PERRY, M.A., M.D., and W. H. A. JACOBSON, M.A., M.Ch. Vol. li. London: J. and A. Churchill. 1895.
- Transactions of the Dermatological Society of Great Britain and Ireland, Edited by JAMES HERBERT STOWERS, M.D., and ARTHUR MARMADUKE SHEILD, M.B., F.R.C.S. 1894-95. Vol. i. London: H. K. Lewis. 1895.
- Notes on Surgery for Nurses. By JOSEPH BELL, M.D., F.R.C.S. Ed., Consulting Surgeon to the Royal Infirmary. Fourth edition revised. Edinburgh: Oliver and Boyd. 1895.
- Aids to the Analysis of Food and Drugs. By T. H. PEARMAIN and C. G. MOOR, M.A., F.C.S., Members of the Society of Public Analysts. London: Baillière, Tindall and Cox.
- Psoriasis, with especial reference to its Prognosis and Treatment. By L. DUNCAN BULKLEY, A.M., M.D.

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